

THE
EDUCATIONAL THEORY
OF
COMENIUS

BY

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TO THE HONOURABLE
Mr. L. W. REYNOLDS,
C. I. E., M. G., I. C. S.,
Agent to the Governor-General in Rajputana,
whose sublime sense of duty and en-
lightened interests have endeared
him to the author, this book
is dedicated.

TO THE HONOURABLE

MRS. A. W. BAYMOND,

C. I. E. M. C. I. C. S.

And to the Government of the Republic of

the United States of America

presented in the name of the

author of this book

is dedicated.

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PREFACE.



In writing this little book I was inspired by a desire to present the educational theory of Comenius in a manner most appealing to the modern reader. Comenius has still a message for statesmen and ecclesiastical leaders as well as professed educationists, and I have striven to keep the needs of all classes of readers in view.

The book is critical rather than informational, for I felt that though much was written on Comenius, a thorough criticism of his theory and practice in the light of modern pedagogy and with reference to our present needs was wanting. It is likely to be helpful to the advanced student of education as

a thought-stimulating introduction to Comenius. For less advanced students and general readers it contains all that they may care to know about the great educator and the merits and defects of his doctrines.

I have prefixed a short description of my life, specially for readers in Europe and America. The interest which my treatise on Rousseau's Educational Theory excited outside India stimulated some of my readers to know something about the author. In the present volume I thought it desirable to meet their demand.

In the preparation of this treatise I have received useful suggestions from Colonel R. J. W. Heale, His Majesty's Resident in Gwalior, Dr. King of the Mission College, Indore, Sahibzada Abdul Wahid Khan of Ajmer, Professor

M. W. Keatinge of Oxford, Professor R. L. Archer of the University of North Wales, and Dr. L. F. Anderson of the Ohio State University, and I acknowledge with thanks the valuable help which the suggestions of these gentlemen gave me. I am also grateful to Mr. B. Littlehales, Educational Commissioner with the Government of India, for his advice that I should write separately on each great educator of historical importance before attempting a comprehensive history of education with movements and tendencies as units of treatment.

AJMER,

S. G. K.

The 8th July, 1928.

Life of the Author.

I was born at Rampur, the capital of a native state of the same name in the United Provinces of Agra and Oudh, on the 25th October, 1893. My father is in possession of a big manuscript which traces my ancestry to the great Mughal chief, Chughtai Khan. The family, however, lived for several centuries in Afghanistan, married Afghan ladies, and acquired Afghan characteristics, including blue eyes and fair colour. Space does not permit me to outline the history of the family. It suffices to say that in the 18th century one of its members, Haji Mohammad Sayeed Khan, a theologian of repute, migrated to India and settled in Rohilkhand, first at Barielly, and after the Rohilla

Family
record.

war of 1773 at Rampur. The Haji's descendants devoted themselves to literary, administrative and military vocations and possessed in an exaggerated form the aversion to trade, industry, and agriculture which characterised the leading Muslim families in Pre-British India. The family produced some great scholars of Oriental learning as well as commissioned officers who upheld the good name of the family in the English East India Company's wars. As an envoy of the Nawab of Rampur, my grandfather rendered meritorious diplomatic services in preventing the outbreak of rebellion in some discontented parts of Rohilkhand during the Mutiny of 1857-58. To-day the military tradition is represented by an uncle of mine, who is a retired cavalry officer, with a brilliant record of service on the

North-Western Frontier, and the administrative side by another uncle, who is a pensioned member of the Council of Regency of Holkar's dominions, while my father symbolises the literary interests of my family.

My father, Maulvi Hakim Mohammad Najmul Ghani Khan, was born on the 8th October, 1859. He inherited glorious traditions, not only from his father, but also from his mother, granddaughter of Rozi Khan, a Rohilla chieftain, who played a prominent part in the battle of Panipat, 1761. My grandmother's brother, Hakim Mohammad Azam Khan, was a voluminous writer on medicine, and his books on various aspects of the subject are used by every Yunani physician in India, and by many in Persia, for he wrote in Persian. Mohammad Azam Khan was, in his last days,

The Author's
father and
his maternal
relations.

the court physician of Maharaja Holkar and died in 1903 at the advanced age of 101 years. Agha Sanjar, a Persian poet, wrote on his death an elegy, whose last couplet was as follows :—

نقام اے مناجہ جہاں ماتم - رواے مرگ کہست
گفت مرگ ختصاحب یوعلیٰ سیدائے خند

(I said, "O Sanjar, whose death has made the world a house of mourning," He said, "The death of the Khan Sahib, who was the Aricenna of India.")

My father learnt medicine from his maternal uncle, Arabic literature from my grandfather, and other subjects from the learned men who were driven to the shelter of the Nawab of Rampur in consequence of the annexation of the kingdom of Oudh by Lord Dalhousie.

In his adolescence my father began an work as an author and has not yet dropped the pen from his hand. Some of his works are as follows :—

The educa-
tion of the
Author's
father.

Books written
by the
Author's
father.

S. No.	Name of the book.	Subject.	Language.	Remarks.
1.	Akhbarus-Sanadid.	History of the Rohillas.	Hindustani...	2 volumes.
2.	History of Oudh.	History ...	Do. ...	5 ..
3.	Karnamai Rajpur- tan.	History of Rajpu- tana.	Do. ...	A corrective to Colonel Tod's Annals of Ra- jasthan.
4.	Bahrul Fashahat ...	Rhetoric and pro- sody.	Hindustani ...	
5.	Nehjul Adab ...	Grammar ...	Persian ...	The most com- prehensive Persian grammar ever written.

S. No.	Name of the book	Subject	Language	Remarks
6.	Risāl, Najmul Ghani.	Grammar	Persian	An abbreviation of the Nihān-ul-Adab.
7.	Qawaide Hamidi.	Do.	Hindustani	
8.	Mizanul Akbar	Logic	Persian	
9.	Mazahibul Islām.	History of the different sects of Islām.	Hindustani	The first book on the subject.
10.	Usulo Fikr	Islamic law	Do	
11.	Talimul Iman	Islamic theology.	Do.	
12.	Alquasul Faisal, etc	Islamic law	Arabic	

14.	Tazkaratus Suluk.	Sufi philosophy	Do.	8 volumes, containing about 7000 pages combines the Vedic, Yunani, and European systems of medicine; embodies the fruits of 20 years' indefatigable labour
15.	Khazainul Advia.	Materia Medica.	Do.	
16.	Qarabadiye Narmul Ghani.	Medicina	Do.	

In my infancy my father was a physician in the service of the Nawab of Rampur. The post that he held was a sinecure; so it enabled him to devote undivided attention to literary work. He taught me the ABC of the mother tongue. But I learnt much more from him unconsciously. It is a typical illustration of the influence of heredity through the social environment that I learnt to write automatically. My father was writing the *History of the Rohillas*, and when he had finished a paragraph, he generally read it aloud to test its melliflence. This enabled me to listen to the events written in the manuscript, which appealed powerfully to my juvenile interest in narratives dealing with action and war. I endeavoured to imitate my father by writing similar narratives, and one day my joy

The Author's education is infancy.

knew no bounds when for the first time I wrote a full page. The passion for writing grew so strong that I rummaged my father's library, selected the most good-looking books, and wrote on the margins of their pages. This practice continued for some time, till my father came to know of it and diverted my zeal into desirable channels.

Some interesting facts about the Author's infancy.

In infancy I displayed remarkable intelligence and self-control. Once, being indisposed, I was given such diet as suited an invalid. In order that I might not be tantalized by the sight of more delicious food, a maid-servant took me out in her lap, when my father and mother dined. Somehow or other I realised what the cause of my removal from the house at meal-times was and told my parents that they might dine in my presence and that I would not

insist on eating with them, as I know that the food they ate would do me harm. In the same way, once in trying to take some sweets out of a plate placed beyond my reach I caused it to fall down, with the result that it struck my head. I neither cried nor went to my parents for help, but straightway ran to the dispensary adjoining our house and had my wound dressed. At another time my mother tried to send me to bed by asking a maid-servant to put on a mask and represent a ghost. I was not afraid, but amused to see the maid in that condition.

At the age of six, my formal education began. I received instruction from several tutors in succession. They taught me something of Persian, but impeded my mental development in consequence of their bad methods of teach-

The earliest
formal edu-
cation re-
corded by the
Author.

ing. At seven I began English for which I evinced remarkable aptitude. In 1901 the Maharana of Udaipur, the premier Rajput chief, gave my father a post in the education department of his state and then for the first time I entered a public school. My father's company, however, taught me more than the formal education that the school imparted. The Russo-Japanese war began and the discussions which my father had about it with his friends in the evenings stimulated me to read the daily papers. I had received a copy of Philip's Shilling Atlas as a prize from the school and this became a favourite plaything in my hands. I often chose one of the maps and located an imaginary republic in it, and then conducted a war between that republic and a neighbouring country, writing descriptions in imitation of the newspapers.

The Turkish Revolution brought about by the Young Turkish party followed the Russo-Japanese war and my love for the Turks prompted me to write a poem on the memorable event. A short novel was also written on the same topic. Unluckily, none of these works which might be useful to me now in connection with my study of child psychology has been preserved.

I was interested in football and hockey, but could never acquire a liking for cricket, I am not sure why. But I was much more interested in reading. My love for books, which owes its origin to my father's example, was developed by the supply of well-graded books. Beginning with historical narratives, historical novels and books of travel and adventure, it was gradually associated with more serious subjects,

The develop-
ment of the
Author's
taste for
reading

When I was in the high school section, I aspired to read the *Encyclopædia Britannica* from A to Z, but could not persevere in the attempt. Perhaps the most useful books that I read in my boyhood were the works of Samuel Smiles (*Duty, Character, and Self-help.*) These made me realise the seriousness of life. It became my favourite occupation to write and classify human virtues and form principles to practise them.

At 16 my university education began. I was admitted to the Holkar College, Indore, and resided for some months with my uncle, who was a member of the Council of Regency of the state. Being in charge of a portfolio in a principality as large as Wales, the uncle could not give such personal attention to me as my father had done,

The Author's
university
education
at Indore.

and I was, ere long, lodged in the college hostel, but did not make a good use of the liberty which the change gave me. I became a revolutionary of the extreme type and believed that man's glory lay in the success with which he defied authority.

Perhaps anarchy and impiety go hand in hand. The perversion of my political views shook my belief in religion, and I concei-

Effects of the Turkish wars on the Author's character, ved that the only effective means of uniting the various Indian communities in a struggle against foreign rule

was to discard religion. But the loss of Tripoli by the Turks and the diminution of the Ottoman Empire in consequence of the Balkan war cured me of irreligiousness. The misfortunes of the Turks made the Muslims of India realise

their helplessness and turn to God for help. They began to compare their present lot with their glorious past, and were convinced that their safety lay in a return to Islam. The Balkan War and the recent Great War, consequently, caused religious revival in this country. I was profoundly influenced by the new spirit and began to study the *Kuran* and other religious books, which have in due course completely altered my conception of the goal of human life. The desire for a practical expression of my sympathy for the Turks prompted me to visit the Turkish consul-general at Bombay, whom I implored to send me to Turkey as a volunteer in the Balkan war. That officer did nothing to help me. What was worse, he treated me with scant courtesy, perhaps, on the assumption that my visit to him was a juvenile prank. Then I requested

Maulana Mohammad Ali to enlist me as a member of Dr. Ansari's Red Crescent party. The Maulana regretted that his arrangements were complete and he could not admit a fresh member.

These activities caused a serious break in my educational career, and when my uncle took long leave from the Indore state College, Ajmer. for a tour round the world, my father, who knew that my stay at Indore was not conducive to his design of making me a great scholar, transferred me to the Government College, Ajmer. The change, however, served no useful purpose. The moral tone of the institution was not of a very elevated type and it was there that I first learnt to smoke. The work of the college was too light for me and there was no provision for the wholesome engagement of super-normal

youths. In such circumstances, I was constrained to make a misuse of my super-abundant energy. My ingenuity helped me to devise fresh plans every day to harass the Superintendent of the hostel. These ended in a quarrel with the principal and a misguided sense of honour prompted me to sever my connection with the college.

To return to my father was impossible, for the father was too strict to receive with open arms the son who had defied his principal. So
The Author
at the Jaswant
College,
Jodhpur. I resorted to Jodhpur and sought admission to the State College. But a few days' attendance at the college lectures convinced me that I knew more than most of the professors of that institution. This made me disgusted with it. Moreover, my father stopped sending me money. I was compelled

to decide that I should seek some employment.

My inexperience led me to Hyderabad in Sind, where I could get no employment for want of a knowledge of the provincial vernacular.

The Author's
miseries at
Hyderabad
(Sind.)

My funds soon began to run short and one day I was horrified to know that I had only a few rupees with me. At the same time I came across a man from Upper India, who in returning from the pilgrimage to Mecca was obliged to halt at Hyderabad for want of money that might procure for him a railway ticket to his home. I collected some subscription for him, and as the money collected would not suffice, I added to it the few coins I had, went with him to the railway station, purchased a ticket for him, and was satisfied to see him start homewards. I was left penniless, but had no intention of living

on charity. A lawyer pitied me and gave me some work in English from time to time. The wages which I thereby earned were too insufficient to provide me with the bare necessities of life. The income was so uncertain that on some days I had to go without meals. To make matters worse winter set in and as I had disposed of my warm clothes and bedding to procure food, it caused me great trouble. On an unusually cold night I had to cover myself with matting in a mosque. That was a period of trial, and considering that I was below 20, I underwent the ordeal with manly courage. My sufferings filled me with profound sympathy for the poor and the needy, which has since been intensified into a virtuous weakness of considering even the crimes of a destitute person pardonable on the ground of his poverty.

At last there was relief from my miserable plight. A gentleman recommended me to the prime minister of the Khairpur State. The minister, who had read some of my father's works, appointed me to a post in the local high school. I entered on my work with enthusiasm and was soon marked out as a conscientious worker. I was, however, an untrained man and some remarks of the Inspector of Schools hurt my amour propre. To remove the defects that marred the excellence of my work, I began the study of books on pedagogy, analysing their contents and translating them into practice.

My good work in the school induced the minister to depute me to the Aitchison Chiefs' College at Lahore as a tutor to a native prince. at Lahore as tutor to the nephew of his highness the Nawab of

Khairpur. It was soon discovered that the collegio arrangements left no scope for me to work on my own initiative. My position was little better than that of an aide-de-camp, and as I was longing to make the best of my powers for the good of mankind, I requested the minister to recall me to Khairpur.

The minister re-appointed me in the high school and at the same time made me the tutor to his sons. I began to live with the minister. He came to be personally interested in me and showed parental regard for my well-being and well-doing. He corrected my political views, and I began to realise the advantages of India's connection with Great Britain, so much so that when the Great War broke out, I volunteered myself for active service. The minister enrolled me as a member of the Khairpur

The Author's
service in the
Great War in
Mesopotamia.

Imperial service troops and I served the Empire in the Mesopotamian campaign, until the Khairpur Imperial service troops were recalled.

On my return I reverted to my post as a teacher and began to

The Author's
educational &
philanthropic
activities at
Rampar

improve my knowledge of history, philosophy, and other subjects by means of

carefully planned self-instruction. A petty incident made me anxious to obtain a university degree. It chanced that I travelled in the same compartment with a professor of the Sind College, Karachi. We discussed several topics and the professor treated me with due courtesy, but when our conversation turned round my education and the professor was informed that I was not a graduate, his attitude towards me underwent a change which he could not conceal. The Bombay University, in

whose territorial jurisdiction Khairpur lay, would not admit me for the degree examination, unless I attended a college affiliated to that university. This I thought unnecessary, for I was, already, well prepared. So I left the Khairpur state service, got an appointment in the state high school at Rampur, my birth-place, and obtained the desired degree from the University of Allahabad as a teacher-candidate. At Rampur I worked for 4 years, which were spent chiefly in applying to actual conditions the modern methods which I studied with avidity. My interest in the well-being of my fellow-citizens made me a popular figure at Rampur. I was associated with a number of literary, social, and athletic clubs. I strove to make arrangements for the education of neglected children and did some work in behalf of religious and charitable institutions

My work at Rampur was followed by my stay for one year at the Allahabad Training College, where, for the first time in India, I made use of the source method of teaching history in schools, made a special study of phonetics and the methods of teaching foreign languages, and stood first in the L. T. examination of the Allahabad University; and by my posting as an educational Inspecting Officer in three districts of Oudh, which brought me face to face with the problems of rural education. *I made arrangements to ensure adequate co-operation between teachers and parents and tried, with some success, to combine, as far as the cut-and-dried curricula prescribed by the Department of Education could allow, the pupils' instruction in formal school subjects with practical situations, and to introduce*

The Author's
work as an
Educational
Inspecting
Officer.

some principles of the Montessori system into the teaching of the preparatory classes. I also grappled, though not quite successfully, with the village teachers' aversion to further study after their appointment and with their ignorance of the wider world. Besides, I had to struggle hard to save my teachers from the axe of retrenchment. To inspire the teachers with a sense of duty, I relied more on example than on precept. Once, when encamped at Pyagpur in the Babraich district, I had a cholera attack, and as soon as the danger was over, I defied my physician and drove to see a neighbouring school, not because I could make a useful inspection in that wrecked condition of health, but because I thought that the moral effect of that exertion on my subordinates would be as great as that of the suicidal charge of the Light Brigade at Balaklava on their comrades.

My experience of teachers in our schools made me alive to the defects in their training and I began to realise that the best service which one devoted to the educational amelioration of my backward nation could do was to train such teachers as were not only skilled in the application of certain methods, but equipped with those moral qualifications without which a knowledge of the technique of education is of no avail. These considerations impelled me to accept the post of the Lecturer in Education offered by the Vice-Chancellor of the Muslim University, Aligarh. I co-operated with the Chairman of the Department of Education in re-organising the Muslim University Training College, which was not till then in a very satisfactory condition. We made some experiments, including the teaching of Persian by the

The Author's
work in the
Muslim
University.

direct method. We started a Montessori school, which prospered well, organised an educational exhibition and a conference of educationists on the occasion of the Muslim University Jubilee, and taught our pupil teachers to make a frequent use of the source method of teaching history in all the school classes. I lectured on several subjects, including the history of education which I tried to make interesting by discussing the past with reference to the present, by eliminating from my lectures unnecessary names, dates, and facts, by correlating the subject with kindred subjects, and, last but not the least, by a careful arrangement of the items to be discussed. I also discovered and formulated some new rules of phonetics. Notwithstanding these engagements in the Training Department, managed to find time for active

participation in the work of the historical and geographical societies of the university and for writing in contemporary periodicals on educational administration and organisation.

The instinct of enterprise, which impelled me in my boyhood to
From Aligarh to Ajmer. request the Turkish Consul-General to enlist me as a volunteer in the Balkan War and to serve in Mesopotamia in the Great War, stimulated me in my adult age to join a post in the Government service in Ajmer for the sake of organising and administering a training institution which might train graduates, undergraduates, and rural teachers, all in one building and under a unified management, at a cost not exceeding the cost of the rural teachers' institution that previously existed there. I undertook to perform the task, because it presented seemir

insurmountable difficulties, which lent the work a colour of enterprise.

I found the rural teachers' institution, which was to be the groundwork of my ambitious scheme, in a wrecked condition, reminding me of the fortress of Adrianople, when it was surrendered by Shukri Pasha to the victorious Bulgarians. I set about reconstructing and developing it from the very day that I took charge of it, and have, by God's Grace, succeeded in reorganising it as the chief centre of educational activities in Rajputana and Central India, inspite of the most adverse circumstances, *e.g.*, inadequate staff, meagre funds, want of necessary books and appliances, absence of a practising high school attached to the institution, and, above all, the difficul-

The organisa-
tion of a
training insti-
tution at
Ajmer.

ties involved in co-ordinating the work of various classes of pupil teachers: graduates, under-graduates, and rural teachers.

Life of Comenius.

John Amos Komensky, known to the world by his Latinised name of Comenius, was born at Nivnitz, a village in Moravia.

Religious
influence in
childhood,

His father, who was a miller, belonged to a community of Christian Protestants, known as the Moravian Brethren. These Protestants followed the martyr Huss, a religious reformer who lived, preached and suffered in Moravia long before Martin Luther raised the banner of revolt against Papal depositism. Comenius's character bore the stamp of the sect to which he belonged. The influences exerted on his impressionable mind by the religious tenets and practices of the Moravian Brethren were reflected in his zeal, piety, humanity, simplicity, self-sacrifice and, above all else, in his democratic spirit.

Primary and
secondary
education.

Comenius received his early education in an elementary school founded by the Moravian Brethren. At the age of sixteen he was admitted to a Latin school in the neighbourhood, where he stayed for four years. The age at which he entered the Latin school was more advanced than the age at which pupils generally began the study of Latin in those days. But his late admission to secondary education was one of the causes to which may be attributed his dissatisfaction with the existing educational system and his desire to replace it by a better one. Being an adolescent, he had reached a fairly advanced stage of mental development, which enabled him to observe with critical eyes the methods of instruction prevalent in the school, and it is reasonable to think that the secondary school which he attended .

was in his mind when at a later date he wrote that the Latin schools of the day were "terrors for boys and shambles for their intellect."

After finishing his course in the Latin school, Comenius joined the Lutheran College of Herborn in Germany for theological studies, and during his two years' stay at that institution he came into contact with John Henry Alsted, a German professor of wonderful attainments. Alsted held enlightened views on education and Comenius's callow zeal for educational reform must have been directed along definite lines under his guidance. It is very probable that Comenius's belief in sense-perception as the source of knowledge and his emphasis on an orderly procedure in education owe their origin to the influence of Alsted. It is also reasonable to think that

Alsted's *Encyclopædia* was one of the earliest influences to which may be traced the origin of Comenius's desire for the co-ordination and systematisation of all branches of human knowledge. The stimulus which Comenius received from Alsted was re-inforced by a report of some German professors on Ratke's method, which in the history of educational theory forms an important link between the new philosophy of Bacon and its application to education by Comenius. From Herborn Comenius went for travel and visited Amsterdam, and then after a short stay at the University of Heidelberg in Germany he returned to Moravia in 1614.

He was now adequately qualified for the ministerial profession, but under the regulations of the Moravian Church he was too young to be ordained a pastor. So he

Earliest
experience as
a teacher.

He made the rector of the Moravian Latin school at Prerau. His connection with the school brought him face to face with educational problems and he began to feel for a better method, specially of language teaching, in order that the amount of time and energy then wasted upon grammatical complications might be saved. To this end he wrote a school text-book on Latin grammar, which was simpler, clearer, and more concise than any work on the subject written theretofore.

At the age of twenty-four he was made a pastor and, two years later, called to the service of the Church at Fulneck, the headquarters of the Brethren. There he busied himself in the religious and social service of his community, but as he was also the superintendent of the school attached to the Church, his didactic interests were

Pastorate in
Mornia.

not lost sight of. His conception of a simpler and surer method began to assume a definite form and he wrote on education.

But the contests of the jarring religious sects, which disturbed the peace of Europe in that stormy period, obstructed his peaceful, constructive work. The Thirty Years' War, which broke out in 1618, wrought havoc in the principal countries of Europe. Its flames soon reached Moravia. With fire and sword the Spaniards laid waste the country, and Fulneck was destroyed in 1621. The Moravian Brethren could expect no mercy at the hands of the champions of the Catholic cause and had to take refuge in the neighbouring mountainous tracts. In the turmoil Comenius lost his wife and child and lived the life of a refugee, seeking the protection of powerful barons.

Persecution was hot, and edict after edict condemning the Moravian Brethren was issued by the Emperor. It was a gloomy period; sorrow and suffering enshrouded the country. In the eyes of a staunch Protestant like Comenius these were the days of the triumph of vice and impiety and the humiliation of virtue and religion. Comenius's only consolation lay in hope, and he was convinced that religion and piety could be restored and the peace of Christendom ensured only through a sound system of education. Thus the calamities which the Thirty Years' War brought in its train strengthened Comenius's dissatisfaction with contemporary education and intensified his desire to undertake its reform.

At last it became impossible for Comenius and his co-religionists to lurk in the mountains and they decided to

*Didactic
activities in
Poland.*

quit their homeland, Comenius resorted to Poland and settled at Lissa under the protection of Count Raphael. There he began teaching in the Moravian gymnasium and set to reconstruct the method of linguistic teaching from the very foundation. Not satisfied with his own ideas, he communicated with the famous educational theorists of the day. His fourteen years' stay at Lissa was perhaps the most remarkable period in his career as an educational reformer. It was at Lissa that he wrote his greatest work, the *Great Didactic*, and published the earliest editions of his Latin text-books. He now began to make his mark in the intellectual world and to acquire international reputation for didactic activities. The community of the Moravian Brethren appreciated his religious services by electing him as their bishop in 1632. But the appreciation of his educational services was not

confined to any particular community ; it was shared by men belonging to different countries and different religious sects.

His pansophic scheme, which aimed at a comprehensive and co-ordinated statement of universal learning, attracted the attention of Samuel Hartlib, a prominent figure in the contemporary literary and philanthropic circles in England. At his invitation, Comenius travelled to London in 1641. The Parliament came to be interested in the pansophic scheme, but the differences between the King and the people assumed serious proportions and the prospects of a civil war began to loom large in the political horizon. In the presence of these dangers people naturally forgot the arts of peace and Comenius's pansophic scheme was

* . . . into oblivion.

Pansophic
activities in
England.

At last, after a stay of about a year

Writing of
text-books
for Sweden.

in London, Comenius had to bid farewell to the shores of England and to sail to Sweden in response to an invitation from Lewis de Geer, a rich Dutch merchant, domiciled in Sweden. The Swedish Government was not interested in pansophia, but their aim was to obtain Comenius's help in replacing the current Latin text books by a more systematic series. Comenius was provided with facilities for the work at Elbing, a Swedish possession in West Prussia. There he spent six years and compiled the revised editions of the Latin text-books which he had first written at Lissa. In 1648 the work was completed and Comenius returned to Lissa, where the revised text-books were printed.

Two years later he received a call from Prince Sigismund of Transylvania to establish, organize, and maintain a model

School or-
ganisation in
Hungary.

Latin school at Sarospatak in Hungary. The school which he organized was a three-class Latin school. It was a residential institution, well-provided with play-fields and recreation grounds. A perfect Latin atmosphere was assiduously maintained. Boys were not allowed to talk in any language other than Latin in the school, the hostel, or the playground. Indeed Comenius strove to see that the school represented a Latin republic in miniature. Office-holders were chosen from among the pupils and were given the same designations as those of the officers of the *Latinum*. The government of the school was, in short, modelled on the old Roman constitution.

The Sarospatak school was a fairly successful experiment in the application of the Comenian principles and methods.

Educational
writings in
Hungary.

With Comenius practical work and theoretical discussion went hand in hand, and he wrote while he worked. His stay at Sarospatak witnessed the composition and publication of fifteen works, the most notable of them being the *Plan of a Pansophic School*, a treatise dealing with the design on which he planned the Sarospatak institution, the *Orbis Pictus* (World in Pictures), which is the first illustrated text-book on record, and the *Schola Ludus* (School Play), which was the earliest application of the 'play-way in education.'

Under the fostering patronage of Prince Sigismund, Comenius hoped to realise his dream of an ideal seven-class Latin school, but the early death of his patron compelled him to return to Lissa in 1654. Fate, however, soon drove him away from his favourite retreat. War

Exile from
Poland.

broke out between Poland and Sweden. The Poles, though Catholics, had accorded a generous treatment to the Moravian Brethren ever since they settled at Lissa, but Comenius was led away by his enthusiasm for Protestantism and incautiously wrote a panegyric on Charles Gustavas, the Swedish king, whom he hailed as the saviour of Christendom. This act of ingratitude infuriated the Poles who sacked Lissa in 1656. Comenius saved his life by flight to Holland, but lost his house, his books, his property and, above all, his manuscript of pansophic materials which embodied the labours of many years. This was a serious blow to him. "This loss," he said, "I shall cease to lament only when I cease to breathe." In fact, it marked the collapse of his pansophic scheme, as he was now too old to possess the strength or courage to pursue his favourite conception further.

The rest of his life he lived peacefully in Holland. The Dutch Government treated him with due honour and hospitality and took his help in the reform of their schools. But Comenius was now too old for original work. The period was, however, remarkable for the collection, arrangement and dissemination of what had been done. His *Complete Pedagogical Works*, including the *Great Didactic*, which was till then in manuscript, were published. These he dedicated to the citizens of Amsterdam in gratitude for their hospitality. He breathed his last in 1671.

His life presents a pathetic story. He was persecuted for conscience' sake. He experienced the miseries of an exile. His patience and fortitude were put to test by bereavement and penury. He had

A word on
his life.

to endure the humiliations of a refugee. His heart was grieved to see the forces of destruction tear to pieces the society in Christendom. But he never despaired. He strove to restore piety and virtue through the systematization and dissemination of learning and the reform of schools. He was, indeed, as Raumer says, "A grand and venerable figure of sorrow."

II

Educational Writings.

Comenius was a voluminous writer.

He wrote on pansophia and religion as well as on education. Herein we deal briefly with such of his works as are of considerable importance to the students of education.

The most memorable monument to

Comenius's greatness as an educator is his *Great Didactic*. It was originally written in

Czech, his mother tongue, in his early years of residence at Lissa.

It was translated into Latin and published as a part of the folio edition of his *Complete Pedagogical Works* at Amsterdam in 1657. The *Great Didactic* was more than a manual of teaching method. It conveyed a message not only to the school-masters, but "to all superiors of human society, to the rulers of states, the pastors of churches, the

The *Great Didactic*, a comprehensive work on education.

parents and guardians of children." Its intention was to cover all the aspects of education and to bring about a complete reorganization of the educational system in all its details. It dealt with the aim and principles of education and discussed the methods of teaching the sciences and languages. It prescribed elaborate courses of training in manual dexterity, morality, and piety. It devoted due attention to what is now known as school hygiene. It set forth a well-considered organization of schools, dealing with the purpose, classification, scope, and curriculum of schools of every grade. It was, in short, the first comprehensive work on education.

But there was much in the *Great Didactic* which could not be considered as original. Dis-

The *Great Didactic*, as emblem. ment of the contemporary tendencies.

satisfaction with the existing schools and the education they

imparted had been in the air since the new scientific spirit which was embodied in the works of Bacon had altered human outlook and made people look with distrust on the educational ideals and methods of the humanists. Men like Ratke were busy in theorising and experimentation in education. Comenius studied carefully the pedagogical works of his contemporaries and immediate predecessors, and the *Great Didactic* was an attempt to systematise and render practicable the precepts of these pioneer workers.

The *Great Didactic*, however, had not the publicity it deserved. This was partly due to Comenius's repulsive style of writing. He divided and subdivided the contents in such a manner as to give the reader a sense of want of con-

The *Great Didactic* not popular.

tinuity in the work. He was full of needless repetitions and of glaring contradictions. He expressed in a hundred words what could be explained in ten. The phraseology was too unadorned and business-like.

Space does not permit us to consider

Two note.
worthy in-
stances.

Comenius's other works on educational theory. They were, in the main, designed to amplify, explain, or defend certain doctrines embodied in the *Great Didactic*. It is, however, worth our while to note the *Methodus Linguarum Novissima* (Newest Method of Teaching Languages), a treatise on the theory of language as well as the methodology of linguistic instruction, and the *Informatorium Skoly Materske* (Handbook of the Mother School), the first book on the teaching of infants.

Next in importance to the *Great Didactic* were Comenius's

The *Janua*,
a Latin text-
book on
realistic
principles.

Latin text-books, which he himself despised, but which saved his name from oblivion

during two centuries. The most notable of these was the *Janua Linguarum Reserata* (Gate of Languages Unlocked). This wonderful book was first published in 1631, but was revised, modified and re-printed several times after its publication during Comenius's life-time. In writing this work Comenius was inspired by a desire to prepare a short cut to the mastery of the Latin tongue. The plan and the name were suggested by a similar work of a Jesuit. The *Janua* contained eight thousand Latin words, which were arranged in one thousand sentences grouped under one hundred chapters, each dealing with a particular subject. It was designed to give the learner a start in Latin vocabulary and at the

same time to impart him a knowledge of the broad fundamental facts connected with all the branches of learning. In other words, it was to serve the purpose of a text-book for content-studies as well as for linguistic teaching. The following were the salient features of the *Janua* :—

- (1) The Latin text was written on the right-hand page and its vernacular translation was given on the left page. It was, therefore, intended to utilize the pupils' knowledge of the vernacular in the learning of Latin.
- (2) No archaic word was used in the book.
- (3) Only such words were given as were in harmony with the age, intellectual capacity,

sentiments, thoughts and needs
of the pupils,

- (4) The sentences were of a moral nature. Nothing which might savour of immorality or impiety was allowed to enter the book.
- (5) No words, excepting very common and unavoidable ones, occurred more than once. One sentence, and not more than one, was designed to teach one word.
- (6) The sentences, which were in the beginning simple, became progressively complex.

While engaged in revising his Latin text-books for the Swedish Government at Elbing, Comenius, discovering that the *Janua* was too difficult for the begin-

Other books
of the
Janua series.

ners, wrote the *Vestibulum* (Vestibule), as an introduction to the *Janua*. This little book was composed to provide the beginner with a vocabulary of one thousand Latin words, which were arranged in four hundred sentences, grouped under seven heads. When the pupil had assimilated the *Vestibulum* and the *Janua*, he had to make a more detailed study of the whole universe as well as to increase his command over the Latin tongue by studying the *Atrium* (Entrance Hall). It dealt with the same subjects as were given in the *Janua*, but in greater detail. The language of the book was, in the same way, more difficult than that of the *Janua*; whereas the latter gave the learner a command over some thousands of Latin words, the *Atrium* was designed to accustom the learner to the use of several thousands of Latin phrases as well as single words, and the types of

sentences involved were more difficult and complex than those in the *Janna*. The text of the *Atrium* was not supplemented by a vernacular version.

The next book, proposed to form part of the series, was the *Sapientia Palatium* (Palace of Wisdom), which was, however, not actually written. Comenius planned to compile in this book a collection of extracts from the choicest Latin writers and to teach the student the elegancies of Latin.

There were several merits in these text-books. In the first place, they prevented the learner from mere quibbling in words.

The learner learnt the language through, and for the understanding of, the realities in his social and physical environment. In the second place, they formed a well-graded and systematic

Merits of
Comenius's
Latin text-
books.

series, proceeding progressively from the simple to the complex in such a manner that the first book in the series paved the ground for the second and the second gave the learner an appropriate apperception-mass for the third. Each succeeding volume was an extension of the preceding one as regards both language and thought-contents. In the third place, they correlated the teaching of the different linguistic subjects: the reading-text, grammar, and composition, etc. Thus Comenius made the reading-text the core of linguistic teaching, which the writers on the teaching of languages recommend to-day.

But there were several defects in this earliest and, consequently, tentative attempt to provide the schools with a systematic series of linguistic text-books. In his desire for the same book for

Defects of
Comenius's
Latin text-
books.

language teaching and also for content-studies, Comenius tried to kill two birds with one stone with the result that both were jeopardized; the language became artificial and unpleasant for the sake of the subject matter, and the subject matter had its proper logical presentation distorted for the sake of the language. Moreover, as every word was used only in its root meaning, the learner could know only one meaning of the word, which could not give him an adequate command over the language.

The greatest defect from the standpoint of modern pedagogy was that as one word was used only in one sentence, the learner could not get the opportunities of coming across the use of that word at intervals and, consequently, he could not revive the associations between that word and its meaning from time to time, after he had done with the sen-

tence which involved the word. This would naturally efface the impressions from his mind, for the permanency of retention and the speed and accuracy of recall depend, above all else, on the frequency of recall, and something which we experience a dozen times after suitable intervals sticks faster to the memory than something which we repeat a hundred times at one sitting and then leave for ever. Besides this consideration, it is also clear that if the learner had to acquire a command over the use of the word by means of only one sentence, it would be necessary for him to repeat the sentence over and over again. This would mean monotonous repetition, which must be exceedingly unpleasant and repulsive to the young pupils. The principle on which the modern linguistic teachers build their methods of providing a ready vocabulary to the pupils is quite different from that adopted by

Comenius. The present language teacher knows that the learning of a language is the formation of habits and that habit-formation requires repetition, but he avoids repetition in one form and makes the pupils read, listen to, and speak the same word in a number of sentences of various forms, and thus combines repetition with variety, which enables the teacher to keep the pupils' attention screwed down to the word to be learnt without unpleasantness. It may also be said against the Comenian Latin text-books that they failed to keep in view one important aim of language teaching, *i. e.*, the cultivation of an æsthetic sense. A language may be learnt for utilitarian purposes by means of artificially-arranged sentences, but no epitome, like the *Janua*, can cultivate in the learner a wholesome literary taste which in adult life becomes one's valuable asset.

Another remarkable work of Comenius was the *Orbis Pictus* (World in Pictures), which was written during his stay at Sarospatak, but not published till 1657 for want of an engraver. This little book, which had an enormous circulation, was an illustrated abridgement of the *Janua*. Each lesson in the book was accompanied by a picture and each object in a picture was marked with a number, the same number being used in the text to indicate the word that stood for the object. It was a remarkable application of the Baconian philosophy, which laid stress on sense-intuition as the ultimate source of knowledge, and was the first practical recognition of the now well-known pedagogical maxim that words should be taught by associating them with the objects they stand for and when it is not practicable to present actual objects to the child's

The *Orbis Pictus*, the first picture-book for schools.

senses, use should be made of pictures in lieu of the objects. The *Orbis Pictus* was, in short, an eloquent testimony to Comenius's appreciation of the importance of visualisation in education. Preceding the *Orbis Pictus*, there was an alphabet, in which each letter was illustrated by the picture of an animal whose cry corresponded to the sound of the letter, or by a familiar object which made a sound similar to the sound of the letter. In adopting this ingenious device Comenius anticipated the modern phononimic processes.

The *Orbis Pictus* remained for a long time the most popular text-book in Europe and served as a model for the innumerable illustrated text-books that have been, thereafter, published for use in schools.

Before we finish this brief survey of Comenius's educational works, mention should be made of his *Schola Ludus*.
The Schola Ludus or the dramatized Janua.

(School Play), which was a dramatised abridgement of the *Janua*, written at Sarospatak, perhaps, in imitation of the Jesuits. It has 5 acts, 21 scenes, and 52 dramatae personae. It was an ingenious attempt to utilise the children's play impulses and imitative tendencies in school instruction. But it is the driest and most uninteresting drama that has ever been staged. It lacked romance and poetry; it was wanting in that colouring of imagination which lends its charm to the most prosaic things and the most familiar talk. Comenius wrote that the staging of the play in the Latin school at Sarospatak was a huge success, but it is not unreasonable to think that the enthusiasm with which the boys took part in it was due, not to any intrinsic merits of the play, but to the novelty of the activity and a break in the school routine which must have been caused by it.

III.

The Religious-scientific Con- ception of Education.

In his endeavours for educational reform Comenius was inspired by two seemingly different, but essentially similar, movements, *viz.*, the Reformation and the Baconian philosophy, the one being a breaking with authority in matters of religion and the other a breaking with authority in matters of science. *His work was a laudable attempt to harmonize the two movements and combine their educational inferences into a system in which religion was the end and science the means.*

This ideal was conspicuous in his conception of the aim of education, which may be stated as follows :—

The present life of the earth is but a preparation for life hereafter, and of this preparation there are 3 grades: to know all things and oneself, to have power over oneself and all things, to refer oneself and all things to God, *i. e.*, knowledge, virtue, and piety. The first is a necessary means to the second and the second to the third. The aim of education is, therefore, to give the individual a knowledge of all the 'knowable things, because if he lacks a universal insight into things, he cannot judge and behave rightly in all possible situations, *i. e.*, he cannot be infallibly virtuous, and if he is deficient in virtue, he cannot be pious.

Comenius held that the seeds of learning, virtue and piety were inherent in man, but their fruition necessitated careful cultivation. "Those plants of paradise,

^h The aim of education.

Formal education over-estimated.

Christian children," he averred, "cannot grow up like a forest, but need tending."

It was his belief that a man, in the real sense of the term, could be "formed" only by education, *i. e.*, formal education. This implied that the development of the innate aptitudes of a generation for knowledge, good behaviour, and godliness depended exclusively on the influences which the art of the preceding generation brought to bear on the new generation with the conscious purpose of training it. Consequently, Comenius minimised the part played in man's development by the automatic processes of his innate capacity to develop and the informal influences exercised on him by the environment in which he lived.

Comenius's conception of the factors conducive to human development was, therefore, antithetical to that of Rousseau, who believed that the self-opera-

Comenius and Rousseau contrasted in regard to their appreciation of formal education.

tive laws of man's growth and the impressions that he automatically received from the environment sufficed for his development and that education was needed only for the upper classes, not because it could contribute directly to development, but because it could serve the negative purpose of protecting the individual from the baneful effects of the artificial circumstances of life in aristocratic circles.

It is unnecessary to say that both Comenius and Rousseau were extremists in their views on the point at issue, and the truth lies in the *via media* between the extremes which their doctrines represented. We cannot, like Rousseau, discard formal education and leave the development of our youth to their undisciplined instinctive tendencies and to the caprici-

Development
due both to
formal
education and
to by-
education.

days and uncertain influences, which the environment would exert on them, if the art of man were not to select, modify, and harmonise with our nature the environmental circumstances for the benefit of the race. At the same time we cannot, in imitation of Comenius, ignore that the formal education which the schools can impart to our children is only a part, and in some cases the least effective part, of that wider education which they receive by virtue of their existence in this world.

Exaggerated as Comenius's view of the importance of formal education in its bearings on intellectual, moral and spiritual training was, the broadened curriculum which he recommended for it was a modernised feature of his educational theory. By regarding the knowledge of the

The broadening of the curriculum as a resultant of the combination of religion and science.

universe as a necessary preliminary to piety, Comenius was saved from making his conception of education narrow and one-sided,—like that of the mediæval clergymen, whose educational activities were limited to theological knowledge and such linguistic learning as was of immediate help to its acquisition or dissemination,—which would otherwise have been the inevitable consequence of his religious standpoint. As it was, his conception of education was fuller in connotation than that of any of his predecessors and contemporaries. The *Great Didactic* devoted due attention to the learning of languages, the acquisition of the knowledge of social and physical sciences as well as of spiritual learning, and the training of the pupil in manual dexterity, morality, and piety. In short, education as conceived by Comenius connoted much more than mere instruction

and, being designed to be the preparation of the pupil for well-doing and well-being in this world for the sake of well-being in the world to come, was based on a wider outlook than the present educational ideals, which do not go beyond well-being and well-doing in this world.

But in his desire for omniscience Comenius aimed at the impracticable. Universal knowledge cannot be attained. It is also unnecessary for good behaviour.

The modern belief is that virtuous conduct is not so much the resultant of the number of ideas which form the mental contents of the individual concerned as it is of the ways in which the ideas are associated and organized in his circle of thought. One may be well-versed in philosophy and science and may withal have a vicious character; another, not

so learned, may be able to judge, decide and behave rightly in the situations of life that confront him by virtue of his habits of association which may enable him to receive, entertain, re-inforce, keep in the focus of consciousness, and translate into action an idea resulting in a virtuous deed and to inhibit an idea suggesting immoral behaviour.

Comenius's encyclopædism was, as we shall see elsewhere, mainly due to the Baconian inspiration, but it was also a result of his emphasis on the combination of science and religion, which impelled him to include into the curriculum theology and metaphysics as well as 'real studies.' He attached great importance to the teaching of the holy Scriptures which he considered to be "the Alpha and the Omega of Christian schools," and laid down

Theological
instruction
emphasised.

"whatever is taught to the boys in addition to the Scriptures (sciences, arts, languages, etc.) should be taught as purely subordinate subjects. In this it will be evident to the pupils that all that does not relate to God and to the future life is nothing but vanity."

Comenius was one of those who attempted to infer the fundamental principles of all positive knowledge from the Scriptures, and quoted freely from them to prove, defend, verify or illustrate his conceptions, whether secular or religious.

But in one way Comenius's powerful religious sentiments had a
Puritanism in education, restrictive and selective effect on his encyclopædism. They led him to recommend the exclusion of pagan writers from the curricula and thus to run counter to the humanistic adoration of the classical paganism. The same sentiments were responsible

for such instructions of his as savoured of Puritanic austerity. In the Latin school at Sarospatak dancing was strictly prohibited, for he held that "the dance is a circle whose centre is the devil. Likewise, he condemned not only games played with dice, but also wrestling, boxing, and swimming.

IV.

Democracy in Education.

Education for all. A strong democratic tendency was the key-note of Comenius's didactic activities. It was the direct outcome of his religious outlook. In holding each man responsible for his own salvation, the Reformation made it necessary for every one to read the Scriptures and the logical consequence was to make instruction universal. In emphatic terms Martin Luther pointed out to the rulers of Germany the need for the education of their subjects, but it was left to Comenius to set about in a practical fashion organizing a universal system of education, which would render it practicable to educate all the young, irrespective of sex, rank or residence. He would exclude none but those to whom God had denied sense and intelligence.

The democratic leanings of Come-

nius, which prompted him to
 Education in
 common
 schools
 recommended. recommend the education of
 all the young, carried him
 further; he advocated that
 children should be educated *together*
 irrespective of rank or sex. He was
 strongly in favour of education in pub-
 lic schools in preference to education
 at home, because in the first place most
 parents had little ability or leisure to
 teach their children, in the second place
 education in common schools enabled
 the pupils to learn from their fellows
 through imitation, in the third place
 it excited the pupils' instinct of com-
 petition and spurred them on to put
 forth their best, in the fourth place it
 could eliminate class prejudices which
 would otherwise take a permanent hold
 of the children's impressionable minds
 to the detriment of society, and in the

fifth place social economy necessitated the division of work, which implied that parents should not be over-burdened with the onerous task of teaching their children, but entrust their education to professional teachers.

The above considerations led Comenius to lay emphasis on class teaching. He condemned the practice of the schools of the day, where the instruction imparted was individualistic, and recommended that pupils should be grouped into classes and all the pupils of a class should use the same text-books, learn the same lessons, and do the same exercise at the same time. He thought that one teacher could teach a hundred pupils at one and the same time with the help of "*dicurions*" or monitors, each of whom was in charge of ten pupils.

Class teaching
favoured.

The class system which Comenius so strongly advocated came to be generally adopted and maintained an unchallenged position in schools till the present century, when the Montessori system and the Dalton plan, which took into consideration the importance of individuality, rung its knell as a unit of teaching and retained it only as a unit of organization.

Comenius's passionate plea for female education is a remarkable testimony to the fact that though in general his educational theory took its cue from what was in the air, yet in some of his important conceptions he was far ahead of his times. In an age when intellectual leaders, like Milton, seemed to believe that servitude was the badge of a woman, Comenius wrote, "Nor can any

Class teaching
discarded by
the 20th
century
reformers.

Arguments
for female
education.

sufficient reason be given why the weaker sex (to give a word of advice on this point in particular) should be altogether excluded from the pursuit of knowledge, whether in Latin or in their mother-tongue. They also are formed in the image of God, and share in His Grace and in the kingdom of the world to come. They are endowed with equal sharpness of mind and capacity for knowledge (often with more than the opposite sex), and they are able to attain the highest positions, since they have often been called by God himself to rule over nations, to give sound advice to kings and princes, to the study of medicine and of other things which benefit the human race, even to the office of prophesying and of inveighing against priests and bishops. Why, therefore, should we admit them to the alphabet and afterward drive them away from books?"

Comenius was, however, conscious
 that a woman's education
A woman to
 be educated
 for household
 duties. should contribute to her pre-
 paration for household duties
 rather than make her antipa-
 thetic to them. "We are not advising,"
 he wrote, "that women be educated
 in such a way that their tendency to
 curiosity shall be developed, but so that
 their sincerity and contentedness may
 be increased, and this chiefly in those
 things which it becomes a woman to
 know and to do; that is to say, all that
 enables her to look after her household
 and to promote the welfare of her hus-
 band and her family." It is hard to
 disagree with this wise statement of the
 aim of female education, but it is easy
 to point out that it is inconsistent with
 Comenius's scheme of huddling toge-
 ther boys and girls in common schools
 and teaching them the same subjects
 by means of the same books.

However different our views may be

Comenius's
support of
the vernacular
due to the
Reformation.

from those of Comenius regarding the merits of the co-education of boys and girls, we have nothing but praise for

his support of the vernacular. It was an inevitable consequence of his attempt to make education available to the common people. Before the Reformation the mother-tongue was ignored as a factor in education. It was Martin Luther whose activities initiated an era in which, after a hard contest, the vernacular ultimately ousted Latin from the sphere of public affairs and, consequently, from the prominent position which it enjoyed in the domain of education. Like Gautama Buddha, he had to stir up the oppressed masses to open revolt against a priestly aristocracy, and his message could not reach the ears of those whose cause he espoused and whose

support he sought, unless it was expressed in a language which they could understand. The Reformation, therefore, helped the vernacular to emerge from negligence. It was, however, left to Comenius to give it its due position in education. He recommended the vernacular not only as the medium of instruction during the first twelve years of the individual's life, but also as a means of instruction in Latin in the earliest classes of the secondary schools.

Comenius's faith in sense-realism, which is to be attributed to the influence of Bacon, strengthened his religious convictions in upholding the vernacular. "To attempt to teach a foreign tongue before the mother-tongue has been learnt," he writes, "is as irritational as to teach a boy to ride before he can walk. My method con-

Comenius's
support of
the vernacular
re-inforced
by his sense-
realism.

fesses its inability to teach Latin to those who are ignorant of the mother-tongue, since the one paves the way for the other. Finally, what I have in view is an education in the objects that surround us, and a brief survey of this education can be obtained from books written in the mother-tongue, which embody a list of the things that exist in the external world. This preliminary survey will render the acquisition of Latin far easier, for it will only be necessary to adopt a new nomenclature to objects."

Comenius's
neglect of
the vernacu-
lar in
practice.

But by a singular irony of fate Comenius, with all his fine thoughts about the importance of the vernacular in education, was destined to confine his activities as a practical worker to the teaching of Latin, the writing of the Latin text-books, and the organization of Latin schools; and it was left to

posterity to undertake the organization of the vernacular education, without which a scheme for universal education would be an unrealised dream.

Sense-Realism.

The Renaissance had two aspects,
 the literary, viz., the re-dis-
 The Renaissance and
 literary training.
 covery of the classical litera-
 tures, and the scientific, which
 had its origin in the brilliant

conjectures of Copernicus and the adven-
 turous voyages of Columbus and Vasco
 da Gama. So far as education was con-
 cerned the literary side of the move-
 ment was the first and most immediate
 in its effects. To exalt humanity
 through the study of the classical writers
 was the ideal that the educators set be-
 fore them. People became keenly alive
 to the beauty of expression as well as to
 the beauty of conception. When the
 inspiration hardened into a convention
 and the form remained without the
 spirit, educational activities confined.

themselves to what is known as verbalism and the schools became "places where minds were fed on words" and where the precious years of youth were spent in irksome and unproductive grammatical drill and grind.

But in the achievements of scientific discoverers, like Galileo and
Origin of
 a case-realism. Kepler, who took their cue from Copernicus, and of explorers, who followed in the footsteps of Columbus and Vasco da Gama, the scientific side of the Renaissance was slowly gathering strength, and the revolt against the now formalised literary tendency of the Renaissance and also against the sterile scholastic modes of thinking,—which the Renaissance had attempted to banish from the domain of learning but with little success on account of the concentration of its main forces on literary accomplish-

ments and the absence of a new method of philosophy to replace the philosophy of the schoolmen,—came to a head in the works of Francis Bacon.

In his *Novum Organum* (the New Instrument), published in Bacon's *Works*.
1620.
1620. 1620, Bacon formulated the method of induction, which was unconsciously used by the scientists of the age. In this treatise he put his finger on the weakness of the current method of deductive reasoning, which the age had inherited, through the schoolmen, from Aristotle, and by virtue of his impressive expression convinced the world of the futility of proceeding from certain *a priori* principles, categorically assumed to be absolute truths, to the deduction, by means of the syllogism, of all the propositions that a science could contain. The new method, by which Bacon designed

to replace the mechanism of deductive reasoning, rested on the assumption that all knowledge came first through the senses and was then worked upon by the human intellect, with the result that the observation of particular things paved the way for the comprehension of general laws. Bacon, therefore, recommended that, to discover the truth, one should use his senses in perceiving real things, verify the knowledge thus acquired by experiment, and finally, by comparison and contrast, infer what we, to-day, call a concept.

The *Novum Organum* made a revolution in modes of thinking and opened unknown routes to scientific investigation. Its effects on education were as revolutionary as on science. The reason is obvious. A new logic almost necessarily gives birth to a new pedagogy. Bacon's laws for the discovery of truth

were convertible into pedagogical maxims which could facilitate the communication of knowledge and conduce to the development of the mind.

The Baconian philosophy was, therefore, the progenitor of a new The whole real-
istic conception
of edu-
cation. cult in education, known as sense-realism. It was so called because those who professed it pinned their faith on the following principles:—

- (1) It is the knowledge of real things that is of use in the well-being and well-doing of mankind and not the mastery of words and sentence which the verbalists regarded as an end in itself.
- (2) This knowledge of real things can be acquired, not through what others have said about

them, but through the use of the learner's own senses.

From these fundamental principles there evolved a number of theories that brought about radical changes in education. The scientific movement, which found an able spokesman in Bacon, was perhaps the first movement that was all-sided in its ultimate effects on educational theory and practice. The Renaissance had wrought profound changes in education, but in its sphere of influence it was limited to the aims and contents of education. Similarly, the educational inferences from the Reformation were applicable only to the aim, scope, contents, and medium of instruction. So far as the methodology of education was concerned, neither the Renaissance nor the Reformation had done anything remarkable. It is no

Effects of sense-realism on the development of educational theory.

exaggeration to say that, except, perhaps, in the Jesuit system of instruction, there was no methodology of education worthy of the name before sense-realism. It does not mean that the teachers worked without a method. Of course, professional work of any kind whatsoever enables the worker to select, through trial and error, certain ways of doing his work and to form, through repetition, more or less fixed habits of sticking to those ways. But the methods of the pro-Comenian schoolmasters lacked a philosophic basis, which alone could impart confidence to those who employed them. The Baconian philosophy was, therefore, a boon to such educational workers as were in earnest about their profession. Being in its essence a mental philosophy, however defective and inadequate, it could afford groundwork for the building of a methodology of education.

Ratke was the first to attempt the construction of this methodology. But his activities were practically confined to the formulation and demonstration of such methods of teaching Latin as might release time and energy for the study of real things. To Comenius is due the credit for the application of the new philosophy to education in all its aspects. Comenius was a staunch sense-realist. His belief in sensation as the foundation of knowledge and, consequently, of wisdom, virtue, and piety finds expression in these passionate words:—

Comenius a
champion of
sense-realism.

“The foundation of all knowledge consists in correctly representing sensible objects to our senses, so that they can be comprehended with facility. I hold that this is the basis of all our

Sense-training
emphasis-
ed as the ba-
sis of moral,
intellectual, &
literary de-
velopment.

other activities, since we could neither speak nor act wisely unless we comprehended what we were to do or say. Now *it is* certain that there is nothing in the intellect that was not first in the senses, and, consequently, it is to lay the foundation of all wisdom, of all eloquence, and of all good and prudent conduct, carefully to train the senses to note with accuracy the differences between natural objects; and as this point, important as it is, is ordinarily neglected in the schools of to-day, and as objects are proposed to scholars that they do not understand because they have not been properly represented to their senses or to their imagination, it is for this reason, on the one hand, that the toil of teaching, and on the other hand the pain of learning, have become so burdensome and so unfruitful."

In the training of the child's powers

Sense-train-
ing the first
step in educa-
tion.

of the mind he observes an order which, though apparently based on the erroneous conception of 'faculties,' does not carry him far amiss;—"First educate the senses, then the memory, then the intellect, last of all the critical faculty. This is the order of nature. The child first perceives through the senses. Everything in the intellect must have come through the senses."

Difference bet-
ween the
sense-realism
of Bacon and
that of Come-
nius.

But it is to be remembered that, though an ardent sense-realist, Comenius was, over and above all else, a minister of an enthusiastic denomination. His fervent evangelicism kept him from belief in sense-experience as the *only* source of knowledge, and revelation was to him a source of knowledge independent of sensation. This was a vital point of difference between Comenius and Bacon.

But in his partiality for real things
 and contempt for the study of
 Verbalism words as an end in itself, Com-
 enius quite out-Baconed Bacon.

Witness his vehement expression, "In the place of dead books, why should we not open the living book of nature? To instruct the young is not to beat into them by repetition a mass of words, phrases, sentences, and opinions gathered out of authors; but it is to open their understanding through things." Again, "We must offer the young not the shadow of things, but the things themselves, which impress the senses and the imagination. Instruction should commence with a real observation of things, and not with a verbal description of them." Also mark the analogies which Comenius employed in the following statement to bring home to his readers the futility of verbalism:—

"Things are essential, words only accidental; things are the body, words but the garment; things are the kernel, words the shells and husks."

In Comenius the individual mind found a champion in its struggle against the thralldom of authority in matters intellectual. To those who caught the first unchecked enthusiasm of the Renaissance the re-awakening promised to bring about a complete emancipation of the individual mind, but their hopes proved to be illusory. The undue importance which men came to attach to the thoughts and ideals of the Greeks and the Romans, while liberating the individual mind from the thralldom of the Mediæval church, imposed on it the bondage of a new paganism, which had Plato and Aristotle as its theologians, oratory as its ritual, and Demosthenes and Cicero as

Direct obser-
vation encour-
aged.

its high priests. It was left to Bacon to break from this bondage; and in the *Great Didactic* Comenius, as his faithful disciple, trumpeted the liberty of the individual mind. "Men must as far as possible be taught to become wise by studying the heavens, the earth, oaks, and beeches, but not by studying books; that is to say, they must learn to know and investigate the things themselves, and not the observations that other people have made about things. We shall thus tread in the footsteps of the wise men of old, if each of us obtain his knowledge from the originals, from things themselves, and from no other source." He reiterates, "It is not Aristotle who must be master of philosophy for Christians, but philosophy must be studied fully according to the leading of senses, reason, and books." The *Great Didactic* has something still more emphatic, which excludes books altogether

and pulls down the ancients from the throne on which the Renaissance impulse from the re-discovery of the classical literatures had installed them:—
 “Do we not dwell in the garden of Nature as well as the ancients? Why should we not use our eyes, ears, and noses as well as they? And why should we need other teachers than these our senses to learn to know the works of Nature, in which there is much more to contemplate than any one person can ever relate and the contemplation of which brings much more of pleasure as well as profit?”

More astounding than any of the above extracts is the following injunction, in which he goes farther than one could expect from a bishop:—“Let this be our business that schools may cease to persuade and begin to demonstrate; cease to dispute and begin to look; cease lastly

to believe and begin to know; for the Aristotelian maxim, 'A learner must believe,' is as tyrannical as it is dangerous; so also is that same Pythagorean, 'The Master has said it.' Let no man be compelled to swear to his master's words, but let the things themselves constrain the intellect."

It may be objected that all this "talk in support of the knowledge of things against verbal training does not agree with what Comenius actually did

Instruction in Latin simplified and improved for realistic ends

This charge of disagreement between theory and practice that my readers will be inclined to bring against Comenius not without justification. We know that the practical activities of Comenius were confined almost wholly within the sphere of Latin teaching and that his principal achievements in practical pedagogy were the writing of Latin texts

books and the organisation of Latin schools. But the accusation is based on considerations which are apparent rather than real. In simplifying the methods of linguistic instruction, in writing epigrams to render possible the acquisition of so much Latin in one year as could not otherwise be acquired in several years, Comenius was not forgetful of his sense-realistic principles. On the other hand, in the interest of a knowledge of things it was necessary for him to shorten and improve the methods of linguistic instruction, so that, on the one hand, time and energy might be released for the study of things, and on the other hand, the language might become for the learner a ready and efficient Slave of the Lamp in his study of the universe. It is to be carefully noted that, be it in theory or in practice, Comenius had his eyes only on the utilitarian value of linguistic instruction. Latin was re-

commended to be learnt, not for æsthetic enjoyment, but for the acquisition of knowledge and the imparting of knowledge, being the international and learned language. He laid down that comprehension should precede expression. "It is necessary," he stated, "that the understanding be first instructed in things and then taught to express them in language." He avowedly condemned the "unhappy divorce of words and things" and recommended that "the study of things should be joined to the study of words that our acquaintance with the objective world and with the language may progress side by side." This emphasis on the correlation of linguistic instruction and content-studies was, as we have elsewhere seen, a marked feature of his Latin textbooks; the *Janua*, for example, was at once an epitome of Latin and an outline of the entire universe.

It is to be borne in mind that Comenius adopted Latin as the medium of higher instruction only as a necessary evil, *i.e.*, as the best of the existing languages, which were, one and all, defective vehicles for the communication of thought. He considered Latin to be too difficult and at the same time a poor language. He had in his mind the creation of a new tongue, similar to the modern Volapuk and Esperanto in its stress on representing one sound by one letter and no more and one object or idea by one, and only one, word, and in possessing infallible rules for the construction of sentences. It was, however, to be different from Volapuk and Esperanto in one respect: whereas these have been formed from existing languages, Comenius's international tongue was to be derived from things themselves in such a manner that the words it contained were not to be

The idea of a perfect Language.

so many labels arbitrarily attached to the things they signified, but the vocal forms of the words were to correspond with the intrinsic nature of the things denoted by them. This was an idea which even Bacon could not venture to conceive, an idea which makes a fetish of sense-realism. No doubt, languages have not sprung up by mere chance. In language, as in anything else which is brought about by man or nature, there is nothing arbitrary. There is not a single word in any language but owes its origin and vogue to such psychical and physical causes as are based on fixed laws governing the mind and matter. But the Comenian scheme of building an artificial language, in which there would be a *clearly perceptible* harmony between words and things, was little short of an absurdity.

Though an advocate of direct obser-

The use of
visualising
devices re-
commended.

vation of things, Comenius knew well the limitations of the objective method. Limited as the learner's immediate environment is, the knowledge that he must acquire to provide himself for future needs is not confined to his immediate environment, and therefore all that he learns cannot be taught by the demonstration of actual objects. Consequently, when actual things were not available, Comenius encouraged the use of such representations of them as could be conveyed by copies, models, and pictures. Herein we find the crude beginnings of the visualising devices of to-day. Comenius's *Orbis Pictus* was based on this principle of visualisation, and in his remarks on the organization of schools he suggested that there should appear on the walls of a classroom such drawings and sketches as were suited

to visualise the essential points in the course of studies of the class. To our astonishment we find that Comenius believed that every item of knowledge, whether earthly or celestial, could be visualised. "If any be uncertain," he averred, "if all things can be placed before the senses in this way, even things spiritual and things absent (things in heaven, or in hell, or beyond the sea), let him remember that all things have been harmoniously arranged by God in such a manner that the higher in the scale of existence can be represented by the lower, the absent by the present, and the invisible by the visible."

VI.

Pansophia.

The origin of
 pansophia in
 Bacon's
 New
 Atlantis.

 Bacon hoped that the application of the inductive method would help investigation to lay open the secrets of nature, and the knowledge thus acquired would, on account of its vast potentialities, enable mankind to live in an environment, where ideal sanitary, material, economic, social, and political conditions would obtain. This ideal was embodied in Bacon's *New Atlantis*, a fable dealing with an imaginary republic, in which the chief feature was Solomon's House. It was an institution equipped with all sorts of scientific instruments, and maintained an army of research scholars and inventors.

Influence of
 the New
 Atlantis.

 The *New Atlantis* fired the imagination of the contemporaries and the immediate successors of

Bacon: Men began to dream of the advent of a millennium of peace and prosperity to be brought about, not by some spiritual agency, but by the revelation of Nature's hidden stores. The knowledge of the material universe, hitherto despised and neglected, acquired a new momentousness and value. Its accumulation became the sacred duty of those who were in the van of literary progress. Educators began to realise the importance of knowledge in shaping the destiny of mankind. It no longer sufficed to impart to the educand culture, discipline, or training, with the aid of materials that were in themselves of secondary importance. The facts to be learned were invested with intrinsic significance. The consequences were the concentration of attention on the knowledge to be taught and the development of an ideal of educational achievement which was little short of omnisci-

ence. Ratke, who set to work as an avowed disciple of Bacon, and Milton, who tried to give a new lease of life to the decadent humanistic system of education by incorporating with it such elements of the realistic tendency as would enable the classics to keep pace with the march of events and hold the field against the rival school, were both in favour of encyclopædic courses.

Comenius was in this respect a true child of his age. We have
The need for
pansephia. already discussed his exaggerated view of the importance of knowledge in the acquisition of prudence, virtue, and piety. But he realised that existing knowledge was in utter confusion. In the first place, the grain lay hidden under the chaff; there was nothing to demarcate the useful from the useless, the verified from the unauthenticated. In the second place, over-

specialization severed one branch of learning from another. The physicist, for instance, neglected theology, and the theologian was ignorant of physics. Consequently, what belonged to one department of knowledge often contradicted the basic principles of another. Few sciences could give adequate support to sister sciences. In the third place, there was not much in one and the same science on which the leading scholars held unanimous views, and so the learner wasted his precious time in grappling with controversial points. In the fourth place, knowledge in each and every science was embodied in works that were in one way or another very fragmentary.

To remedy these defects, Comenius

The essential features of the pansophic scheme.

aimed at the selection of authentic and useful material out of the muddled scrap-heap,

the collection of all that was 'knowable',
 the correlation of all the branches of
 knowledge in such a way as to bring
 them into harmony with one another,
 the preparation of a statement of know-
 ledge that carried with it the approval
 of recognized authorities in the domain
 of science and letters, and the arrange-
 ment of its contents in a systematic man-
 ner with common fundamental facts as
 the starting-point. The name which he
 gave to this bold and ingenious concep-
 tion of an authoritative, well-selected,
 well-arranged, comprehensive,
 Definition of and unified statement of the
 Pansophia knowledge of the universe in all its
 aspects, physical, social, and spiritual,
 was Pansophia.

Wild as this conception might
 appear, it well deserves our
 admiration. Though, in the
 main, it drew its inspiration
 from Solomon's House, it im-
 Differences between
 Comenius's
 pansophia
 and Bacon's
 ideal.

plied much more than the mere re-iteration of the ideal embodied in that mythical institution. The chief points of difference between the conception of Bacon and the pansophic ideal of his great disciple are the following:—

1. Bacon's practical interest was directed to the growth of sciences by further additions which the investigators would make with the help of the new instrument he had placed in their hands. Comenius was, like Bacon, alive to the need of additions to what the race already knew. Witness his thoughts on the duties of learned men to be engaged in the *Schola Scholarum* (School of Schools), an international institution which he recommended for research work: "These men should.....spread the light of wisdom throughout the

Pansophia aimed at the proper organization of existing knowledge; Solomon's House was concerned with the extension of knowledge.

human race with greater success than has hitherto been attained, and benefit humanity by new and useful inventions. For this no single man and no single generation is sufficient, and it is therefore essential that the work be carried on by many, working together and employing the researches of their predecessors as a starting-point." But like a practical man as he ever was, Comenius planned first to accumulate and give a desirable form to existing knowledge and then to employ it as a starting-point for the 'forwarding' of the sciences. The pansophic scheme of Comenius, therefore, emanated from a more practical attitude of mind than did Bacon's reverie. It was in fact a necessary preliminary to the realisation of the great philosopher's vision.

2. Bacon failed to appreciate the

Pansophia
implied the
unification
of different
subjects ;
Bacon
ignored it.

need for the co-ordination of all the branches of learning, which was the most prominent feature in the pansophic plan. To do Comenius justice, it must be said that this conception of harmonizing the different sciences was entirely his own. It should further be remarked that it was not lacking in utility. We all know how many evils, intellectual and moral, hold their sway in this world because of the support that they receive from the want of co-ordination among the various departments of human knowledge. If knowledge is power, it is obvious that a cordial alliance of its various constituents will impart greater strength to mankind than an accumulation of more or less detached and, in many cases, contradictory systems of ideas. The pansophic scheme, therefore, merits the gratitude of the

race, being the first, though unsuccessful, attempt to build human knowledge on the principle of fundamental unity in diversity.

3. In his great masterpiece of constructive imagination, Bacon had his eye only on such knowledge as can be acquired by sense-perception, specially that knowledge which concerns physical sciences. Comenius's design was wider in its scope, as it included the knowledge of God as well as of man and nature. In a letter which he wrote from Amsterdam to the Royal Society in London he implored its members not to deal too exclusively with the physical aspect of the universe to the neglect of the more important metaphysical and supernatural side. Obviously this difference between Comenius and Bacon is attributable to Comenius's preoccupation with religion.

Panosophia
dealt with
all knowledge;
Solomon's
House almost
exclusively
with physical
sciences.

The pansophic ideal was too ambitious

to be attained by a single man.

Comenius's
failure in rea-
lising his pan-
sophic ideal.

Comenius did not fail to realise this. He knew that the work which its pursuit would entail required the co-operation of proficient scholars, who might be the leaders of the intellectual world in all the departments of learning, and funds were needed for the initiation and continuation of their work. This consideration impelled Comenius to seek state patronage, for in those days few private bodies possessed resources that would suffice for the enterprising scheme. Consequently, the great reformer broadcast his ideas on the subject. The scheme won the sympathy of many, but the only effective offer of help came from England. Samuel Hartlib's influence succeeded in interesting the parliament in pansophia, but the political strife between the Roundheads

and the Cavaliers frustrated the hopes of Comenius and his English admirers. The dauntless soul, however, clung fast to the lofty ideal, until the sack of Lissa by the Poles, which caused Comenius the greatest loss that he thought he ever suffered, the loss of his *Sylva of Pansophia*, a manuscript in which he had been, for years, accumulating pansophic materials. This disaster virtually marked the end of his pansophic activities.

The pansophic ideal,¹ however, pervaded the entire system of Comenius's pansophic curricula. Comenius's educational theory. It was responsible for his emphasis on teaching all things to all men. He held that all should be educated in all those subjects which can make a man wise, virtuous, and pious. At every stage of education he recommended a pansophic course. He was, however,

careful to see that this instruction in universal knowledge was in conformity with the age and capacity of the pupil. Even in the mother school, designed for children below six years of age, the course recommended was pansophic, but it meant little more than an accurate perception of such commonplace things and the comprehension of such simple terms as were considered to be at the root of all-sided knowledge. In the vernacular school, which was proposed to instruct all the young of both sexes for the next six years, this pansophic instruction implied, not a deep or exact knowledge of all the arts and sciences, but the principles, causes, and uses of the most important things in the universe in all its aspects, with the intention of providing the pupil with ability to judge and behave rightly in the varying situations of life. The same

subjects were repeated, but in greater detail, in the Latin school, admission to which was not recommended to be compulsory for all. The pansophic instruction, therefore, so far as it related to compulsory universal education, was tantamount to the teaching of such rudimentary facts as would enable the learner to respond well to all the common situations in man's physical, social, and spiritual environments, and did not, as such, savour of impractical idealism.

The pansophic ideal of Comenius was also conspicuous in his Latin text-books. Each book in the Janual series was designed to present to the learner such an epitome of the universe as was not beyond his comprehension. The delineation of the universe was, of course, in broad outline in the first book of the series and grew more detailed in each succeeding book.

Comenius's
pansophic
school text-
books

VII.

Utilitarianism.

Comenius's faith in sense-realism resulted in the characterisation of his educational theory by what is, in educational terminology, known as utilitarianism. To be clear as to what we mean when we call Comenius a utilitarian we shall deal with the different meanings in which the term utilitarianism has been, and can be, used in psychology and ethics as well as in pedagogy.

In ethics, utilitarianism stands for the doctrine that the greatest happiness of the greatest number *should be* the end and aim of all social and political institutions. The doctrine, whose chief exponents were Jeremy Bentham and John Stuart Mill, regarded the happiness of all concerned as the

Utilitaria-
nism as an
ethical
doctrine.

criterion of virtuous behaviour. It was social rather than individualistic in its standpoint and was a wholesome corrective of the egoistic hedonism of the earlier days, which regarded the happiness of the doer alone as the end and aim of his conduct. Utilitarianism, as defined here, found its definite formulation in the 18th century; but if we apply it to the philosophy underlying the ideals of Comenius, we find that in one sense this ethical doctrine could be, and in another could not be, applicable to his conception of the goal of human behaviour. Comenius held that the individual was to acquire knowledge, virtue, and piety for his own salvation. This conception, apparently, savoured of egoistic hedonism but with the important difference that the happiness which Comenius set before the individual as the ultimate end of his activities was celestial rather than earthly.

Its attainment necessitated that the individual should so regulate his conduct as to contribute to the greatest good of the society ; thus the happiness of those who could be effected by the individual's behaviour in this world was regarded to be the means for the attainment of happiness by the individual in the world to come. So Comenius's ideal combined the egoistic hedonism of the earlier days with the universal utilitarianism that developed in the following centuries. But this is not what we are herein concerned with.

The term utilitarianism can be, though it has not been, used Utilitarianism as a psychological principle. to connote a psychological principle, which implies that human behaviour, in its various forms, is for the individual's adaptation to his environment, which gives him pleasure. This means that pleasure is the end of

human behaviour, and feeling, knowing, willing, and doing have, one and all, a utilitarian function and value. The validity of the principle may be questioned on the following grounds:—

1. Pleasure is not always the conscious end of activity. In the case of reflex and instinctive activities pleasure is not the motive, it may be the unforeseen result. The infant who sees the red ball suspended in front of its chair and who reaches out and grasps the ball, does not execute this activity because of a desire to obtain pleasure. The activity is of a spontaneous character and the pleasure issues because the end of the activity has been gratified. Pleasure, no doubt, exercises a selective influence on the child's activities, prompting it to repeat an activity that has caused it pleasure and refrain from one that has

resulted in pain, but it does not
 resulted in pain, but it does not
 activity.

2. A lower animal's activities be, one and all, for adaptation to environment, but a man's activities not necessarily conducive to this. A saint, for instance, will ignore environment in which he is placed direct his activities to the pursuit of spiritual ideal.

3. In many cases, the individual stimulated by his sense of duty, consciously sets his face against a line of action that may result in pleasure deliberately subjects himself to pain.

These arguments may be refuted as follows:—

1. Pleasure may not be the *conscious* end of activity; it is, none the less, the end of activity. Modern developments

Psychology have shown that our conscious behaviour and our unconscious activities, be they of the mind or of the body, rest ultimately on one and the same basis. The unconscious as well as the conscious activities of the organism, man, are purposive. They are variant in detail, but alike in general plan. The palpitation of the heart, the respiratory function of the lungs, the wrestling of the phagocytes in our blood with the bacilli of influenza, the automotile closing of the eye when a glare of light suddenly assails the retina, the infant's opening its mouth to receive its food, the unconscious recoiling of the foot when a thorn pricks it, the startling of the child when a sudden thunderous sound dashes against its ear-drum, the crying of the baby when a bitter drop falls into its mouth, are as well designed by Nature for the purpose of our adjust-

ment to the environment as the sustained reasoning of a philosopher or the consciously directed imagination of an artist. There is, in short, a common element of drive or urge in our unconscious activities and our conscious behaviour, and the drive is towards an adjustment to the environment, which results in pleasure and is conducive to the survival of the individual and, through him, to the survival and progress of the race. Consequently, Nature directs every form of activity to a utilitarian goal, no matter how unconscious the doer may be of the utility of the activity.

2. For a lower animal the environment is more or less fixed; it is mainly a physical and immediate environment. But it is not so with a human being, whose imagination, memory, and intelligence impart a meaning to his environment which defies constancy. For the

The human being the environment is not,
 except in a primitive stage of civilization,
 an immediate environment; it is an idea-
 lized future environment to which he must
 adapt himself. The physical environment
 is only a part, and certainly an insignifi-
 cant part, of man's environment, which
 has several aspects, social and spiritual
 as well as physical. In spite of all the
 apparent similarities between man and
 man, so widely different are the capaci-
 ties to learn and improve in different
 human beings that for all intents and
 purposes each one has his own environ-
 ment. Two men may live in the same
 perceptible surroundings, but may withal
 have exceedingly different environments.
 The saint, therefore, in his contempt for
 his social and physical environment and
 in his absorption in meditation and
 worship does behave for the sake of
 adaptation to his environment, and his

activities have a utilitarian aim, fundamentally similar to the purpose for the activities of an Eskimo in hot pursuit of a caribou.

5. Though different in its intensity and in its mode of expression in different cases, the feeling of pleasure may be regarded as fixed in its subjective nature. But the object which may inspire one with this feeling is not fixed. What may cause pleasure to one may give pain to another. What may be a real source of joy for an individual at one time may cease to bring to the same individual the slightest glow of gratification at another time. The growth of knowledge and intelligence and the consequent changes in human outlook tend to associate the feeling of pleasure with something different from what originally caused pleasure. Consequently, the man who, in his behaviour, is inspired

by a sense of duty to the utter disregard of what may gratify his carnal appetites is prompted to behave for the sake of pleasure as much as a sot who ignores the welfare of his fellow-beings and entertains himself with a cup of strong drink when he should be engaged in social service.

It is clear from the above that the psychological principle that human behaviour is for the sake of utility or pleasure rests on a solid foundation. Its application to education implies an emphasis on education as the preparation of the learner for actual life and, consequently, on the selection of the contents of the curriculum with regard to their usefulness in the learner's adjustment to the environment. In the days of Comenius, however, psychology as a science did not exist. Nevertheless,

(Comenius a
utilitarian
in the sense
that he
believed that
learning is
for use in
this world
and the world
to come.

his genius enabled him to foresee intuitively what psychology was destined to reveal to posterity. "Nothing is provided by nature," he observed, "of which the practical application is not soon evident." He held that education was not for intellectual luxury or the mere satisfaction of theoretical curiosity, but for clearly conceived utilitarian purposes, in the first instance for adjustment to this world, and ultimately for adjustment to the next world, and he prescribed that "the child shall learn only what is to be useful to him in this life or in the other;" and also, "With every subject of instruction the question of its practical use must be raised, that nothing useless may be learnt." Consequently, everything useless was to be ruthlessly expunged from the course of instruction. Languages were to be learnt, not for the indolent pleasure which results from

handy words, but for their utility in the acquisition and communication of knowledge. Comenius had no patience with the divorce between the school and the outer world which is even to-day a curse of education. "Nothing should be learned," he said, "for its value at school, but for its use in life."

Comenius was not satisfied with the Insistence on immediate utility. *remote* utility of what the pupil learnt, but laid stress on the *immediate* utility of what he was required to do or know. He laid down that "only those things should be taught whose utility can be easily demonstrated." No doubt the pupil has much to learn beforehand in the course of his preparation for the wider world, and, therefore, it cannot always be practicable to convince him of the utility of what he is required to learn. But much can be done, in this respect, if the

teacher presents his lessons in such a manner that everything he teaches acquires a twofold utility, *i.e.*, the thing learnt is realised by the pupil as something having an intimate connection with some of his immediate needs and interests, while the teacher, without the pupil's consciousness of it, appreciates the thing taught as something which will prove useful to the pupil in adjusting himself to some situations that may confront him in adult life. For instance, the teacher may teach some rules concerning official correspondence with the remote purpose of imparting to the pupils ability to carry on such correspondence with propriety in adult life, but he may associate an immediate utility with the lesson by making it the centre of a series of playful activities in which the pupils represent officers, clerks, and applicants.

Utilitarian as Comenius was in the sense that education is for usefulness in the actual situations of life, his was not a narrow, bread-and-butter utilitarianism. The preparation of the educand for life may be either specific or general. If education aims at specific preparation, it gives the learner such knowledge and skill as can be directly helpful to him in earning his livelihood. The course of study is, therefore, avowedly vocational. On the contrary, if the educator has in view the general preparation of the educand, he contrives to equip him with such knowledge and ability and to discipline him in such forms of activity as are of greatest and most permanent significance in the wider world in which the pupil will be called upon to play his part as a man and not as a mere earning machine. The

Comenius is a
abstinence
from the
bread-and-
butter
utilitarianism.

course of study which must suit this conception of education has a distinctly cultural character. This general preparation does not run counter to specific preparation. If it does not directly provide for the individual's success in his occupation, it does so indirectly by imparting an all-round general efficiency which may facilitate the acquisition of efficiency in the particular calling of the individual. Consequently, it is quite reasonable to recommend an education designed for the general preparation of the educand as a necessary preliminary to specific or professional preparation; and Comenius's insistence on an education which taught the educand what Rousseau felicitously calls the art of humanity does not detract from the utilitarian value of the educational system he planned and advocated.

There is yet another sense in which

Utilitarian-
ism as oppos-
ed to discipl-
inarianism.

the word utilitarian has been used specifically in education.

In this sense, it signifies a doctrine which is exactly antithetical to disciplinarianism. As long as one is called a utilitarian because of his faith in a system of education that renders a man fit for a successful response to the situations of life, his utilitarianism need not be in contradiction to disciplinarianism, for the development of mental faculties by appropriate exercises which characterises the disciplinarian conception of education, may possess appreciable utility in life. But the sense in which we are now to discuss utilitarianism does not admit of its combination with disciplinarianism. If you believe that the facts learnt are really important and the exercise of the mind which the learning of the facts involves is of mere incidental value, you

are a utilitarian; if you think that the facts learnt are in themselves of little consequence and the way in which the facts are utilised in the exercise and development of the various powers of the mind is of real significance in education, you are a disciplinarian.

The origin of disciplinarianism in this sense is traceable to the once popular faculty psychology. It was believed that the brain was divided into a number of compartments, each of which was the seat of a particular power or faculty of the mind and that each of these faculties had a distinct identity and might work independently of others. The necessary corollary from the faculty psychology was the doctrine of formal training which signified that if a faculty of the mind was exercised and developed by use in connection with one sub-

The pseudo-
psychological
basis of dis-
ciplinarian-
ism.

ject, it could work efficiently in all the departments of human knowledge and activity, exactly as the muscles of the arm, if developed by dumb-bell exercises, could be efficiently serviceable in all the activities which required manual strength. *e.g.*, in lifting a heavy load, in putting the weight, and in wrestling; and just as a Sandow would select and recommend for physical development certain apparatus and prescribe certain definite ways of using the apparatus, in the same way the adherents of the doctrine of formal training selected certain materials from human knowledge and recommended them as apparatus for intellectual gymnastics, prescribing certain definite ways in which the materials were to be used so as to contribute most satisfactorily to the intellectual development of the learner. Mathematical training was

considered to be capable of making the man a reasonable creature in all the situations of life, grammar was regarded as the best means of cultivating in him the power of voluntary attention and effort, linguistic recitation was valued as the best apparatus for the exercise of memory, and so forth. In short, there was an appropriate subject for the development of each and every mental faculty and an antidote for every disease of the mind: and as the number of faculties was limited, the consequence was that a few subjects, considered to be capable of affording them exercise in the surest ways came to monopolize the curriculum, which had no room for many other subjects containing facts of intrinsic value.

The faculty psychology persisted in

The present position of the doctrine of formal training, exercising its baneful influence on most educational institutions, till Herbart dealt

at it a blow that in shaking it also shook the disciplinarian conception of education. He taught us that the mind is an indivisible unity, that all conscious activity, cognitive, affective, and conative, is due to ideas and their tendency to associate with one another, and that the various phases of mental activity are inseparably involved in every state of consciousness. The doctrine of formal training was, therefore, thrown overboard, the contents of the course of instruction began to be judged from the standpoint of their own value in the life of the learner, and a broadening of the curriculum was the result. The faculty psychology was buried so deep by Herbart that it has never risen again. But the doctrine of formal training has

come to be revived in a modified form. As it is, 'nobody who has received modern psychological training would believe that if memory is exercised by committing to heart the names of the officers of the Black Watch regiment, the learner will by so doing acquire facility in memorizing formulæ in algebra; but it is generally held that the efficiency imparted to the mind by exercise in one subject can facilitate the learner's work in another subject so far as the two subjects possess common elements, *e.g.*, the memorizing of the linguistic text can be helpful to the learner in memorizing an extract from his text-book on history in as much as the words and phrases, the types of sentences, and the thought-contents are identical or similar. It is also believed that our absorption in the study of a subject or in the pursuit of an occupa-

tion can develop in us some particular sentiment or ideal, which may be transferred to other pursuits: for example, the qualities generated in a child's sentiment towards the household pets may colour his behaviour towards a regiment of soldiers which is, in adult life, placed under his command; similarly an individual's engagement in his school studies may develop in him the ideal of patient and thorough work which will stand him in good stead in his professional activities.

Defective as Comenius's psychological notions were, his belief in sense-
 Comenius's
 utilitarianism
 as opposed to
 discipli-
 narianism. realism saved him from giving
 way to disciplinarianism. He
 was, on the contrary, an ex-
 tremist in his appreciation of the im-
 portance of the facts to be learnt. In
 dealing with his pansophic scheme we
 have seen how he made a fetish of

knowledge. He could not be satisfied by choosing subjects for the curriculum in such a way that a limited number of them might embody elements common to all the departments of human learning and all the spheres of human activity. In consequence of the current belief in the transfer of training, in proportion to the existence of common elements, in kindred subjects, the present educationist will think it unnecessary to include trigonometry in the curriculum, if he has already assigned a place in it to geometry. But Comenius would exclude nothing useful. He must teach all things to all men. All his efforts were directed to the Herculean task of making the acquisition of universal knowledge practicable. His pansophic scheme aimed at its collection and presentation in a concise and systematic form. His Latin text-books were

designed to give the pupil a command over the medium of instruction in such a way as to release time and energy for the acquisition of knowledge. He did much to improve the methods of instruction; but to him the method was important, not because it provided exercise for this faculty or that, but only as a useful means to the acquisition of knowledge. He had no patience with those roundabout methods which the disciplinarians recommended, methods which presented the subject-matter in a manner calculated to accustom the pupil to drudgery and strenuous volitional effort. Had Comenius been alive to-day, he would have set at naught the heuristic method and ridiculed the source method of teaching history. We adopt these methods for the exercise and development of the pupil's intellectual powers. But Comenius thought differently. His

writings on education indicate that he considered the growth of the pupil's knowledge to be tantamount to, or at least as the sure means of, his mental development. In short, Comenius subordinated the methods of instruction to the facts conveyed by instruction. That is why he repeatedly piques himself on the idea that the methods he recommended were the surest, easiest, quickest, and the most pleasant means of the acquisition of knowledge. This pompous claim is heralded in the very title of the *Great Didactic*, which runs as follows:—

“*The Great Didactic*, setting forth the whole art of teaching all things to all men: or a certain inducement to found such schools in all parishes, towns, and villages of every Christian kingdom, that the entire youth of both sexes, none being excepted, shall quickly, pleasantly, and

thoroughly become learned in the sciences, pure in morals, trained to piety, and in this manner instructed in all things necessary for the present and for the future life, in which, with respect to everything that is suggested, its fundamental principles are set forth from the essential nature of the matter, its truth is proved by examples from the several mechanical arts, its order is clearly set forth in years, months, days and hours, and finally, an easy and sure method is shown, by which it can be pleasantly brought into existence.

The above statement admirably sums up what we have tried to indicate in this chapter, i.e., that Comenius was a utilitarian in two senses:—

A summarised statement of Comenius's utilitarianism.

1. He believed that the value of education lay in its usefulness in this

life and in the life hereafter. His educational theory was, in this respect, antithetical to the doctrine that knowledge should be learnt for the sake of knowledge, a notion entertained by those who believe that uselessness is of the essence of liberal education.

2. He attached primary importance to the facts taught, and cared for the method of teaching only as an effective means to the communication of facts. In holding this view he contradicted the disciplinarians who looked upon the way in which a mental faculty was exercised as of real importance in education and considered what was taught to be little more than suitable material for mental exercise.

If we combine the two aspects of Comenius's utilitarianism, we may conclude that in his theory of education the

method of instruction was treated as a means for the acquisition of knowledge, which was, in its turn, considered to be the means for a suitable response to all the situations of *this* life, and this last was the means for happiness in the life hereafter. .

VIII.

The Infallible Method.

Comenius believed that his ideal of teaching all things to all men, was attainable if education was reformed on the principle of order, which he considered to be 'Education's first law,' and 'the dominating principle in the art of teaching.' So firm was his belief in the inevitable success of an orderly procedure that for him efficient education was synonymous with the systematic arrangement of the subjects taught and the right methods of presenting them. He recommended that the time for instruction should be carefully divided, so that each year, each month, each day, and each hour might have its appointed task, and exhorted the teachers to be careful to see that the division of the time was rigidly

adhered to in order that nothing might be omitted or perverted. Comenius attributed miraculous virtue to the systematic arrangement of the contents and methods of education. "As soon as order is thoroughly secured," he wrote, "the process of the art (of instruction) will proceed as easily and as spontaneously as those of nature." He was sanguine that the orderly procedure of education would enable the children to receive the desired instruction as rapidly, pleasantly, and thoroughly, as the fish learn to swim and the birds to fly. He had an exaggerated notion of the efficacy of what he conceived to be *the* systematic method of education, as is evidenced by the following quotation from the *Great Didactic* :—

"As soon as we succeed in finding the proper method, it will be no harder

to teach any number desired than, with the help of the printing press, to cover a thousand sheets daily with the neatest writing."

The most conspicuous and, from the standpoint of modern pedagogy, the least scientific feature of the system, which Comenius regarded to be infallible, was uniformity. He proposed the same schools for all, boys and girls, both noble and ignoble, rich and poor, in all cities and towns, villages and hamlets, and laid down that the same teacher should teach in one school or, at least, in one class, the same text-book and the same edition of it should be used by all the pupils in a class, the whole class should do the same exercises at the same time, and each class should use the same text-book for instruction

Uniformity, a characteristic of the Comenian system of education.

in all the subjects, literary as well as realistic. He also insisted on the use of the same method for teaching all the languages, the same method for instruction in all the sciences, and the same method for training in all the arts. In Comenius's system there was no scope for such variations in method as might suit a particular teacher or a particular class. Every teacher was required to use the same method, without making any concession for the particular circumstances in which he was conducting his work. All the classes had to learn the same subjects by the same methods in the same periods of the working day. In all the classes the same amount of time was spent in school instruction and private study.

In fact, the thread of uniformity runs through all the texture of Com-

enius's educational theory. He fixed the same number of years for each of the four grades of schools, which represented successive stages in the individual's development from birth to maturity, and divided the work of all the schools among the same number of classes, assigning the same amount of time to each class.

For his advocacy of a systematic ^{Uniformity} ~~unadmirable~~ procedure in education Comenius deserves our gratitude. But it is hard to agree with his assertion that the desired systematisation of education must impose an unalterable uniformity on the arrangement of its contents and the methods of presenting them. In considering his comparison of the method of instruction to the printing press and the minds of the pupils to sheets of paper, the following facts are not to be ignored:—

1. The sheets of paper are blank, when they are put to the printing press; the pupil's mind, on the contrary, is not a blank to start with, even though the educator catch hold of him at birth. No doubt, the theory of innate ideas is a mere illusion. But the child, when it comes into the world, brings with it certain tendencies and potentialities, which give a characteristic turn to the synthetic activity through which it receives impressions from, and reacts upon, the environment. Heredity endows different individuals with different capacities and aptitudes. Consequently, the minds of the pupils may, if at all, be analogous to different sheets of paper, each one having the capacity to receive the impression of the print in its *own* way. To produce the desired effect, the educator must take into con-

Different pupils need different educative methods.

sideration the individuality of the pupil.

This implies that in determining what he teaches, how long he teaches, how he teaches, and in what order he teaches, he must as far as the circumstances allow, guide himself by the principle of variety in dealing with various minds. It is no longer possible, in the light of what modern psychology tells us of individual differences to consider any one course of study as ideal and to hold that any method of instruction or plan of procedure in school technique can be applied with like favourable results to all children.

2. Man is affected by a much greater variety of influences from the environment, and to a far greater extent, than a sheet of paper. Matter is constantly flowing in and out of, and modifying,

different
circumstances
require different
methods
of education.

man's bodily structure. In the same way, the mind is incessantly receiving impressions from, and being modified by, the environment. The incidences of time and place, therefore, bring about such modifications in man as are much more perceptible than any modifications they may produce in a sheet of paper. Age and residence are responsible, not only for striking differences between man and man, but also for remarkable alterations in the mind and body of the same man. The repose of a sheet of paper, manufactured by a Canadian factory, in the stores of the Central Stationery Office at Calcutta for a period of five years will not make it perceptibly different from what it was when exported, or from a copy of the same sheet, kept for a similar period in a stationer's shop at Moscow. But a stay for a couple of years in London will

make a child of a Punjabi merchant remarkably different from what he was when he bade adieu to his birthplace or from his brother who has been receiving education in Lahore. The necessary inference from this is that the educator should not stick to a constant system or persist in applying a never-changing method, but vary his procedure to suit the varying conditions of the social and physical surroundings of his pupils.

3. In dealing with a sheet of paper, the printing press operates on matter in a passive state. But in his endeavours to make the desired impressions on the pupil's mind, the teacher has to deal with active machinery, moving through its inner impulses towards a definite goal. This machinery does not easily submit to the sway of the machinery of

The method
of teaching
should adapt
itself to the
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moods of the
pupil.

the teacher's method. It may co-operate with the latter, when it suits its purpose; but it may also compete with or run counter to the predominating machinery. Consequently, it is a question of pitting force against force, and like a good general the teacher must needs survey, not only the field of operations, but the strength and arrangement of the hostile force and regulate his movements in conformity with the shifting position of the enemy. No pre-conceived method can, in fact, claim certainty. The effectual method of teaching evolves mainly in the course of the lesson it deals with and takes its cue from the varying moods of the pupil's mind. Modern pedagogy does not pretend to provide the teacher with an infallible instrument that may be equally serviceable in all the details of his work. Books on methodology can do no more than to

state, explain, and illustrate, broad principles whose limits the teacher should not transgress, but within which there is scope for the teacher's adopting any method that may suit the actual conditions.

4. In the process of printing the really effective factor is the printing press and the activities of the labourer who plies the machine are subservient and auxiliary to it. But in education the teacher is a potent factor. Teaching implies the interaction of the teacher's mind and the pupil's mind. Consequently, the efficacy of a method of instruction depends upon the use that the teacher makes of it, and as the mind of one teacher differs vitally from the mind of another, we cannot prescribe one and the same method for all teachers. The indi-

'duality of the teacher must be taken into calculation and he should have due liberty to adopt such methods as may suit his own aptitudes, powers, and qualifications as well as the age, capacity, interests, and inclinations of his pupils, the nature of the subject taught, and the varying conditions of the social and physical environments.

The Method of Nature.

Given the need of an infallible procedure of education, the problem was where to find it. To the solution of the problem Comenius devoted years of careful thought and patient labour, which recall to one's mind the super-human perseverance with which Gautama Budha toiled in search of the key of salvation. At last, after much "groping" in the dark and "after many workings and tossings of the mind," the great Moravian lighted upon the object of his quest and discovered that the key of method lay "in the immovable laws of nature", for "if we wish to find a remedy for the defects of nature, it is in nature herself that we must look for it, since it is certain that art can do nothing

Comenius's
conception
of the
Natural
Method.

unless it imitate nature." Elsewhere he contends, "Order which is the dominating principle in the art of teaching all things to all men, should be, and can be, borrowed from no other source but the operations of nature. As soon as this principle is thoroughly secured, the processes of art will proceed as easily and as spontaneously as those of nature. Very aptly does Cicero say, 'If we take Nature as our guide, she will never lead us astray,' and also, 'Under the guidance of Nature it is impossible to go astray.' This is our belief, and our advice is to watch the operations of nature carefully and to imitate them." To put the matter in a nut-shell, Comenius believed that the imitation of the operations of nature in the art of education could provide him with the infallible system he was in search of. This statement is, however, too vague to give us

definite guidance, for nature has been, and can be, interpreted to connote widely, divergent, and even contradictory, conceptions. The meaning which Comenius attributed to the method of nature reflects the influence of Bacon. The cumulative effect of the works of the "noble Verulam" was, as we have already seen, the transfer of attention from metaphysical speculation to the study of the physical universe and the discovery of the laws that governed it. The sub-human aspect of nature began to loom large in the intellectual firmament. Her adoration became a fashionable craze. The enchanted imagination of the age invested her with marvellous virtues. She was believed to possess the panacea for all the ills that afflicted mankind. Comenius was caught in the whirl of the contemporaneous furore. For him, following nature was tantamount

mount to observing the life of birds, the growth of trees, and the influence of the sun, and establishing pedagogical principles in the light of his observations. The following extract from the *Great Didactic* presents a capital illustration of Comenius's method of deducing the maxims of education from what he considered to be the laws of nature as well as of the verbosity which stood in his way in the publicity of his doctrines:—

“ Nature does not hurry, but advances slowly.”

For example, a bird does not place its eggs in the fire, in order to hatch them quickly, but, lets them develop slowly, under the influence of natural warmth. Neither, later on, does it cram its chickens with food that they may

Comenius's
natural
method illus-
trated.

mature quickly (for this would only choke them), but it selects their food with care and gives it to them gradually in the quantities that their weak digestion can support.

Imitation.—The builder, too, does not erect the walls on the foundations with undue haste and then straightway put on the roof; since, unless the foundations were given time to dry and become firm, they would sink under the superincumbent weight, and the whole building would tumble down. Large stone buildings, therefore, cannot be finished within one year, but must have a suitable length of time allotted for their construction.

Nor does the gardener expect a plant to grow large in the first month, or to bear fruit at the end of the first year. He does not, therefore, tend and water it every day, nor does he warm it with

fire or with quicklime, but is content with the moisture that comes from heaven and with the warmth that the sun provides.

Deviation.—For the young, therefore it is torture:—

(i) If they are compelled to receive six, seven, or eight hours' instruction daily, and private lessons in addition.

(ii) If they are overburdened with dictations, with exercises, and with the lessons that they have to commit to memory, until nausea and, in some cases, insanity is produced.

If we take a jar with a narrow mouth (for to this we may compare a boy's intellect) and attempt to pour a quantity of water into it violently, ins-

tend of allowing it to trickle in drop by drop, what will be the result? Without doubt the greater part of the liquid will flow over the side, and ultimately the jar will contain less than if the operation had taken place gradually. Quite as foolish is the action of those who try to teach their pupils, not as much as they can assimilate, but as much as they themselves wish; for the faculties need to be supported and not to be overburdened, and the teacher, like the physician, is the servant and not the master.

Rectification.—The ease and the pleasantness of study will therefore be increased:—

- (i) If the class instruction be curtailed as much as possible, namely, to four hours, and if the same length of time be left for private study

- (ii) If the pupils be forced to memorise as little as possible, that is to say, only the most important things; of the rest they need only grasp the general meaning.
- (iii) If everything be arranged to suit the capacity of the pupil, which increases naturally with study and age."

With his characteristic love of uniformity Comenius, throughout his exposition of the principles of the natural method, adopted, the same procedure as illustrated above, viz, the enunciation of what he regarded to be a law of nature, an example from sub-human nature in support of his general statement, the exposition of the defects characterising the existing system of education and, fina-

Uniformity in preventing the principles of the method of nature.

ly, the formulation of certain pedagogical maxims that would rectify the errors of the existing schools and bring education into conformity with that law of nature:

Critics have vied with one another in finding fault with the Comenian method of nature. In the first place, it is contended that in education 'following nature' signifies that the teacher should start with the hereditary endowment of the pupil and work in harmony with the laws that govern the pupil's mental activity and development.

Comenius, on the contrary, did not take pains to examine the proper constitution and nature of man and to build his educational theory on that basis. For the nature of man he substituted nature without man and drew his principles for

the higher life from what he observed in the lower. In the second place, it is argued that Comenius's method of establishing his principles of pedagogy was neither deductive nor inductive. It implied little more than analogy, which is good for illustration, not for proof. The analogies are, it is pointed out, too fanciful, in many cases, to lend any authority to the pedagogical maxims that are assumed to be based on them. In the third place, Comenius is accused of deceiving his readers as to the origin of his principles of pedagogy, on the ground that they were not inferred scientifically from fundamental principles, as the *Great Didactic* pretends to show, but were the results of his practical experience as a teacher. Comenius is, therefore, considered to be an imposter in claiming for a collection of *a posteriori* precepts, depending exclusively on the unreliable

support of empirical evidence, the honour that is due to a system proceeding philosophically from cause to effect.

These contentions are too weighty to be lightly brushed aside.

In defence of Comenius. But to be fair to Comenius, one should not ignore the following considerations:—

1. In his conception of the laws of nature, Comenius appears to have been conscious of a unity permeating the entire universe, organic and inorganic, animate and inanimate, physical and psychical. His great successor, Froebel, devoted his life to the revelation of this unity, and his belief in it lends its colour to his entire educational theory. That there are certain forces ruling mind and matter, alike, is very probable. The theory of evolution, for example, sees in the history of all forms of exist-

can discern the same process of nature as helps us to retain in memory the words that have been ineffaceably impressed on our nerve-cells by dint of repetition.

It is, therefore, unreasonable to despise Comenius's exposition of the method of nature as the resultant of the unsystematic workings of a fanciful mind. On the other hand, it is not improbable that his genius enabled him to realise that certain processes of nature were equally manifest in human nature and sub-human nature. He may also have conceived that the phenomena common to man and nature without man were, owing to their universality, of primary importance and fundamental in their relation to the phenomena peculiar to human nature or to sub-human nature. He may, consequently, have

2. No doubt, some of the conclusions of Comenius involved fantastic analogies, *e.g.*, his recommendation that the same teacher should teach a school, or at least a class, on the ground that the same sun sheds light on the whole world. But, in general, if we assume, as we have attempted to maintain above, that he had a realisation of the universality of fundamental laws of nature, the charge of dependence on analogy, automatically, falls to the ground. Given the possibility of some common laws governing human nature and sub-human nature, Comenius's line of argument becomes inductive in that the law is derived from the observation of particular facts in sub-human nature, one of which he gives as an illustration of the law, and verified by observations in the domain of architecture, gardening, and other arts. It is deductive in so far as

he applies the law enunciated to the particularised sphere of education and infers from it some principles of instruction.

3. There can, reasonably, be no moral or intellectual culpability, if one were to form a hypothesis empirically before proceeding to demonstrate it scientifically. Empirical acquaintance is, generally, a necessary preliminary to investigation on scientific lines. In it the scientific mind finds both a stimulus and a guidance to the line along which it should proceed. Newton did, empirically, perceive the effects of gravitation before he sought for a scientific explanation of its nature. So Comenius was unquestionably right in first collecting facts through experience and then in attempting to establish them on a philosophical basis in the light of the meagre philosophy then available.

Before I conclude the discussion

The Comenian method at once natural and artificial. Comenius's method of nature, I must needs point out that his conception of education according to nature was more rational than that of Rousseau. With the latter nature was, in the main, opposed to art. He held that the child should be allowed to develop its powers under the unimpeded influences of its physical environment. Comenius, on the contrary, recommended that in the education of the human race, the art of man should make the best of what nature could provide. The system of education he elaborated was at once natural and artificial. "This is an artificial arrangement," he explained, "but it is also natural; for the exact mode in which the action takes place is artificial, but the law on which the action depends is natural." In a word, Comenius's method laid due stress on nurture as well as nature.

Paidocentricism.

However debatable Comenius's procedure of evolving the principles of his natural method of education may be, there is a unanimous verdict in favour of the principles themselves. They are a striking proof of his modernism, and it is worth our while to make a brief survey of such of them as anticipate the psychologized education of to day.

The dominating tendency of modern education is the transfer of the 'incidence' of attention from the thing learnt to the learner, connoted by the neological term, paidocentricism. In the doctrine of Comenius, the paidocentric principles occupy a prominent position. His panophic

scheme was, in its essence, nothing but an attempt to replace the existing arrangement of the different subjects, made on principles that disregarded how knowledge grew in the learning mind, by a unified statement of knowledge, which would take account of the organic unity of the learner's mind and render the subject matter more easily and thoroughly assimilable by the educand and susceptible of an efficient, power-generating organisation in his circle of thought. In a word, pansophia would substitute a psychological arrangement of knowledge for a logical one.

Paidocentric as the pansophic ideal
 Conception of development from within, was, Comenius's conception of education according to nature implied principles that still more emphatically testified to his paidocentric activities. They emanated from his

notion of human development. It is gratifying to note that Comenius's belief in sense-experience as the ultimate source of knowledge did not impel him, as it was destined to do in the case of Locke, to exalt the influences of the impressions from without at the expense of the inner impulses. We find in the *Great Didactic* "In all the operations of nature development is from within;" and again, "The right instruction of youth does not consist in cramming them with a mass of words, phrases, sentences, and opinions collected from the authors, but in *unfolding the understanding that many little streams may flow therefrom as from a living fountain*. Hitherto the schools have not laboured that the children might unfold like the young tree from the impulse of its own roots, but have been contented when they covered themselves with foreign

branches Thus they have taught the youth, after the manner of *Æsop's Crow*, to adorn themselves with strange feathers."

The ideas embodied in the foregoing statement would have made *Combination of the inner and the outer,* Comenius a seventeenth century Froebel, but for his belief that the inner development of the educand was so intimate a correlative of the growth of his knowledge that, for all intents and purposes, development and learning were identical. Comenius, consequently, combined in him Froebel's appreciation of the inner with Herbart's estimation of the outer.

An inevitable consequence of this standpoint was an emphasis on *Instruction to suit the age of the pupil.* the correlation of the impressions brought to the learner's mind by the subject matter with the

initiation and progress of his powers. In the preceding chapter the illustration of Comenius's procedure of deducing the maxims of pedagogy from the processes of nature involved the principle, "Everything should be so arranged as to suit the capacity of the pupil, which increases naturally with study and age." Elsewhere he said, "All the subjects that are to be learned should be so arranged as to suit the age of the students, that nothing that is beyond their comprehension be given them to learn." He even anticipated what Pestalozzi meant by the 'psychological moment' for the presentation of the subject matter. Witness his words, "Nothing should be taught to the young, unless it is not only permitted but *actually demanded by their age and mental strength.*"

The most important corollary from

Gradation. Comenius's conception of an education adapted to the age and capacity of the pupil was the recognition of the necessity of a well-graded procedure of instruction. He laid down that there should be no pressure and derived support for his dictum from Aristotle's statement, "The desire of knowledge is implanted in man, and the mind grows, as the body does, by taking proper nourishment, not by being stretched on the rack." He also observed, "Nature compels nothing to advance that is not driven forward by its own mature strength," and again, "Nature makes no leaps, but proceeds step by step." Accordingly, the Comenian procedure of education condemned hurry; teachers were exhorted to proceed from the easy to the more difficult and from the simple to the more complex in such a way that the difficulty or the

complexity increased steadily, but so imperceptibly that nowhere in the pupil's progress the next step might make him conscious that there was an increase in the difficulty or complexity of his task.

But in determining what was simple Comenius did not view the thing taught from the standpoint of a logician or a scientific analyst, but from the point of view of the learner. That is why he emphasised that the general should be taught before the particular. This does not mean that Comenius recommended a deductive method of teaching. The explanation of what he had in his mind lies in this statement: "If anything is to be learnt, its general principles must first be explained. Its details may then be considered and not till then."

The general
outline before
particular
details.

Consequently, the Comenian method proceeded from the most general, by graded steps, to the most minute and presented the outline before its elaboration. If a rule was to be taught its general tenor was to be thoroughly understood before the discussion of exceptions and anomalies. If the lesson aimed at giving the pupil the knowledge of an object, his attention was directed, first to the object as a whole, and afterwards to its constituents. In the same way, a sentence was learnt as a whole from the *Janua*, before it was analysed into words for grammatical scrutiny.

In this respect, Comenius was far more reasonable than Pestalozzi, who in his desire for commencing the child's education with the simplest and most elementary facts in the subjects to be learnt carried

Over-anal-
ysis avoided.

ysis to an extent beyond which ana-
 was impossible, and presented the
 analysable elements thus discovered
 the beginner. The Pestalozzian ins-
 truction in language began, not with sig-
 nificant words and sentences, but with
 meaningless syllables arranged on pho-
 netic principles; similarly, in learning to
 write the child did not start with words,
 but even with letters, but with loops,
 curves, and lines into which a master of
 calligraphy would divide the forms of
 letters; equally absurd was his method
 of teaching drawing, in which he recom-
 mended initial exercises in lines and
 angles, instead of practice in drawing
 concrete objects. Consequently, the
 simplest element in Pestalozzi's pro-
 gramme of studies was such from the
 objective point of view, whereas the
 simplest element for Comenius was such
 from the subjective point of view.

The fact is that minute analysis is the function of a well-developed intellect and is practicable only after repeated and intimate acquaintance with the object to be analysed. But the child's intellect is in the making, and his acquaintance with the environment is superficial and recent, for childhood is one's introduction to the world. Consequently what is a complex for the adult is often a unit for the child. To a botanist a rose is a complex divisible into several constituent parts and analysable into several elementary qualities; to the child it is a unified whole. At birth the child has a sentience of his environment, including itself, as of one 'booming, buzzing confusion.' The growth of his powers and experience enable him, by slow degrees, to analyse this unified confusion into separate things.

The whole life of an individual is, from this point of view, one long process of analysis, the indivisible unit of knowledge being the biggest at birth and becoming smaller and smaller as age and experience increase.

These considerations indicate how Comenius in recommending a proceeding from the general outline to the particular details foresaw what psychology enabled the educator to realise long after his demise. In the same way, to our utter astonishment, he laid down such principles of gradation of studies as have found a place in our modern pedagogy in consequence of our knowledge of apperception, a psychical process, discovered and formulated by Herbart in the 19th century. These principles of Comenius are embodied in the following statements :—

"All studies should be carefully graduated throughout the various classes in such a way that those that come first may prepare the way for, and throw light on, those that come after."

"Every subject should be taught in definitely graded steps, that the work of one day may thus expand that of the previous day, and lead up to that of to-morrow."

"All the studies should be so arranged that those which come later may depend on those that have gone before, and those which come first may be fixed in the mind by those that follow."

Thus Comenius demonstrated the necessity of so arranging the lessons that each lesson built itself on the pupil's apperception-mass resulting from previous lessons, and

Preparation.

provided the pupil with the ideas that would enable him to apperceive the contents of the following lesson. Each lesson was, in short, to be the presentation of the old in the new. Comenius also foresaw what is meant by the first Herbartian step, preparation, which aims at bringing into the pupil's consciousness such stock of his previously acquired ideas as will enable him to apperceive the lesson that follows. The *Didactica Magna* states, "It is desirable that before any special study is introduced, the minds of the students be prepared and made receptive of it"

Comenius's insistence on the gradation of instruction in accordance with the principles discussed above permeates his entire educational theory. We discern it in his general statement of the curricula of

Graded
curricula.

the various schools he proposed: "These different schools are not to deal with different subjects, but should treat the same subjects in different ways, giving instruction in all that can produce true men, true Christians, and true scholars; throughout graduating the instruction to the age of the pupil and the knowledge that he already possesses. In the earlier school every thing is taught in a general and undefined manner, while in those that follow the information is particularized and exact; just as a tree puts forth more branches and shoots each successive year and grows stronger and more fruitful."

In his Latin text-books, Comenius applied the same principles.

irregular text-books. The sentences and thought-contents in the *Janua hec* are progressively difficult and complex and

ch book in the Janual series was an extension of the previous book.

Our contention that the present-day tendency of treating the pupil as the centre of interest and consideration was a conspicuous feature of Comenius's educational system is borne out, with remarkable clearness, by his conception of man's development as a *harmonious* evolution of all his powers and the consequent stress on the principle of correlation of the [educational activities. Given the organic unity of man, correlation becomes the keynote of education. The psychological grounds for the correlation of educational influences were first explained by Herbart, who pointed out how ideas are powerless in influencing man's destiny, except when associated with one another, and how the sum of knowledge

and concepts is incapable of impelling the will with its utmost energy, except "by virtue of the *complete interpenetration of all its parts*." That the principle of correlation has not yet been firmly established in actual school practice is evidenced by Sir John Adam's complaint, "At present, instruction is largely a thing of shreds and patches. Our pupils learn a large number of subjects, each more or less independently of the others, and our pupils too often see little connection among them."

If the various school activities are woefully disintegrated to-day, *Correlation emphasised by Comenius.* they were much more so in the days of Comenius, and to remedy the miserable state of affairs, he emphasised correlation throughout his educational system. At each stage of education, even in infancy, training in

morality, piety, and physical dexterity was to be imparted along with, and as an inseparable correlate of, linguistic and intellectual instruction. Comenius formulated several maxims of correlation, for instance:—

“ Things that are naturally connected ought to be taught in combination.”
 “ Great stress (should) be laid on the points of resemblance between cognate subjects.” “ The study of languages..... should be joined to that of objects.”
 “ Exercises in reading and writing should always be combined.” “ The sense of hearing should always be conjoined with that of sight, and the tongue should be trained in combination with the hand. The subjects that are taught should not merely be taught orally, and thus appeal to the ear alone, but should be pictorially illustrated, and thus develop imagination by the help of the

eye." "Each subject should be taught in combination with those which are correlative to it; that is to say, words should be studied in combination with the things to which they refer; while reading and writing, exercises in style and logical thought, teaching and learning, amusement and serious study, should be continually joined together."

Comenius's attempt to combine amusement and serious study was, perhaps, the most daring application of the principle of correlation before our own century. Even Froebel durst not conceive it, except in the favourite occupations of men possessing an artistic sense of the highest type. Comenius's views on this topic found a clear expression in the following statement:—

"It will be of immense use if the amusements that are provided to relax the

Combination
of amusement
and serious
occupation.

instruction, not only in the various linguistic subjects, grammar, translation, composition, reading, and writing, but also in all the realistic subjects, scientific, social, moral, and religious. The principle of concentration has found favour with the exponents of modern pedagogy, but in a less exaggerated form, e. g., in treating the reading-book as the centre of instruction in the various linguistic subjects.

It is, however, generally realised that
To ensure correlation only one teacher was recommended for one class. a mere unification of the contents of the curriculum will not suffice. It is averred that the correlation of the influences brought to bear upon the learner by the minds of the various teachers is still more necessary. On this score most people find fault with the Dalton plan and look with distrust at the Gary school. This need of the unification of the teaching

mind was also foreseen by Comenius, who believed that "a diversity of teachers tends to distract the mind quite as much as a diversity of books," and recommended one teacher for all the subjects in one school or, at least, in one class.

Dr. Rusk observes that Comenius's instruction, "Schools should be organized in such a manner that the scholar shall be occupied with only one object of study at any given time," is contradictory to his principles of correlation mentioned above. To my mind the contradiction is apparent rather than real. On the contrary, the combination of these seemingly contradictory maxims is a clear proof of his paidocentrism. When he recommends the combination of things, he finds in the things to be combined a natural inter-connection, that is, he discovers that the said things

Simultaneous
instruction in
psychological-
ly different
objects con-
demned.

are capable of being interpreted as a unified complex by the learner's mind. When he disapproves of combination, he does so in case the things concerned are not susceptible of finding a place in what Herbart might call one and the same presentation-mass. In denouncing the teaching of two things at a time, Comenius did not object to the correlation of various points connected together by a psychological link, nor did he condemn cross-references between homogeneous subjects, for example, between history and geography. Similarly, he did not question the desirability of teaching several subjects in one and the same working day. His objection was levelled at the attempt to teach two subjects in one and the same period as also at distracting the boy's attention from one thing or one phase of the topic in hand by presenting him

something not helpful to him in the comprehension of the point under discussion. In a word, Comenius desired to secure one step, before another was attempted.

This brings us face to face with
 Thoroughness. Comenius's principle of thoroughness, which is a remarkable characteristic of his methodology. It is conspicuous in the very title of the *Great Didactic*. It is also evidenced by the statements, "The education given shall not be false but real, not superficial but thorough;" "Everything should be taught thoroughly, briefly, and pithily." In learning Latin from the *Janna*, one and the same sentence was so often repeated in reading, speaking, translating, analysing, parsing and composition that it was thoroughly assimilated by the pupil and the word, whose use it illustra-

ted, became a part and parcel of the pupil's working vocabulary.

Another *paidocentric* tendency in Comenius's educational system was his stress on learning by doing. The pupil was made to learn a language by reading and by its use in speech and writing. We have seen how the boys in the Latin school at Sarospatak were required to use Latin at all times, outside the class-room as well as inside it. The various practical subjects, writing, singing, etc., which Comenius called *arts*, were learned by actual practice. Virtue was inculcated, not by fine talk, but by good example, by sympathetic guidance, and above all, by well-graded practical exercises. Even the pupil's religion must have a practical outcome. "From the very beginning," Comenius enjoined, "it is necessary to form *practical* and not *theoretical*

Christians, if we wish to form true Christians at all. For religion is a real thing and not a reflection of reality, and should prove its reality by *the practical results it provides.*" Consequently, it was laid down that the infant should commence its training in morality by bowing, kneeling down, and raising up its hands, as if for prayers. Play was considered to be a sure means of education in childhood, and the physical well-being of the learner was never ignored. The *Schola Ludus* was a capital illustration of Comenius's recognition of the importance of movement in education.

After what we have seen of the influence of Bacon on Comenius's doctrines, it is, perhaps, unnecessary to mention that teaching by induction was one of the main features of his pedagogy. This is, in its essence, a paidocentric tendency, for the

The inductive
method of
teaching.

inductive method presents the subject-matter to the learner in the order determined by the way in which knowledge develops from sensation to conception in the pupil's mind. Comenius held that the matter should come before the form, examples before rules, and things before their classification. Accordingly, the pupil was not required to learn conjugations declensions, grammatical definitions and rules of syntax before he was introduced to a reading-book. On the other hand, the pupil was made to read, at the very start, a suitable reading book, like the *Festibulum*, which afforded material for learning grammatical rules inductively. These were, in their turn, applied deductively to help the pupil in the use and understanding of the language.

The modern emphasis on paidocen-

Comenius's
solicitude for
the educand's
bodily health.

tricism impels the educator of to-day to provide carefully for the physical well-being of the child, with the result that a knowledge of school hygiene has become as essential to the equipment of a teacher as a knowledge of child psychology. This aspect of modern pedagogy was also conspicuous in Comenius's scheme. He instructed all to "play that they may have a sound mind in a sound body," and dwelt at length on the proper care of the educand's physique, not because, like the Greeks, he aimed at his preparation for a military career, but because he considered that the health of the body lay at the root of wisdom, morality, and piety. Consequently, he recommended that the educand's diet should be moderate in quantity and simple in quality and pointed out that "the human body needs movement, ex-

citement and exercise." Not only did Comenius realise the necessity of repose and diversion, but he also conceived that the periods of rest and recreation should alternate with those of work and study, a notion which entitles him to rank with the most upto-date educationists of our own times.

There is yet another paidocentric tendency that characterised Facility. Comenius's educational system. It was his earnest aspiration to lighten the drudgery of learning for the child and make instruction pleasurable and interesting. The importance of the topic in modern education necessitates that it should be dwelt on in some detail, and so our next chapter will deal exclusively with it.

XI.

Stimuli.

On the subject of incentives to learning Comenius held enlightened views. Thanks to his paidocentric inclinations, he would not, by compulsion, hold the learner to the mastery of difficult and uninteresting tasks, in the hope that by so doing he would enable the learner to face, with success, the hard facts of this callous world. He would, on the contrary, sugar-coat the pills of school tasks and rely on interest as the sure means of education.

The doctrine of interest, whose pedagogical significance was first worked out in a scientific manner by Herbart, has been, perhaps, the most potent factor in revolutionising our methods of education.

There is no book on modern pedagogy but emphasises that the teacher should make the lesson interesting. The maxim, as it stands, is, however, too inadequate to give us definite guidance as to the stimuli that should be made use of in education. If we interpret interest in its popular sense, the maxim is liable to render pedagogy too soft by identifying interest with amusement or entertainment. On the other hand, if we view the maxim from the psychological standpoint, it admits of the educator's use of a large variety of stimuli, some of which are as disastrous in their consequences as soft pedagogy. Interest can ensue from an undesirable stimulus as well as from a desirable one. A series of activities conducive to the gratification of a low, carnal appetite is, in terms of psychology, interesting in the same sense as social service rendered for

the satisfaction of the inner conscience. Similarly, there are negative interests as well as positive interests, and the former are generally more powerful than the latter in stimulating a human being to know and act. Ordinarily the pupil is more quickly interested in and, consequently, gives readier attention to, what involves fear of punishment, loss, or injury than to something associated with the hope of reward, gain, or honour. Thus the principle of making the lesson interesting involves a mixture of opposites. It can be a means of moral training as well as of the cultivation of vicious tendencies. It may be used to make learning pleasant or unpleasant in accordance with the meaning that the teacher puts on it. It is capable of developing, in the pupil, self-reliance and initiative as also susceptible of habituating him to regulate his behaviour mainly by external pressure.

The fact is that psychology tells us but what *is* and leaves what *should be* to be determined by ethics. She explains the various stimuli, but affords little help to the teacher in the choice of the stimuli for use in education. For guidance in this critical work the teacher must perforce turn to ethics. In brief, the doctrine of interest in its relation to education should rest on a *psycho-ethical* basis.

In this respect, Comenius merits our praise. He did not favour reliance on an ignoble stimulus. For instance, the public notables were to stimulate the pupils by giving '*small*' presents, which implied that the stimulus was not to assume the form of avarice, but of a desire for the approval of the good and the wise. Nor did Comenius brook an appeal to a negative form of interest.

Comenius's
insistence on
desirable
forms of in-
terest.

He would eliminate punishment and compulsion. The stimuli which he recommended were ethically desirable, or at least allowable, forms of positive interest. These we discuss herein.

In the first place, Comenius would

Apperception,
a source of
interest. make the lessons interesting
by a careful gradation of
studies in such a manner that
the blending together of the new and
the old might facilitate the pupil's assimilation of the new.

In the second place, Comenius be-

A judicious
time-table, a
source of
interest. lieved that the pupil's interest
would be secured, if the time-
table of school instruction
and of home work were drawn up on
the principle of facility for the learner.
"For the young," he remarked, "it is
torture if they are compelled to receive
six, seven, or eight hours' instruction

daily and private lessons in addition." He prescribed that the class instruction should last only four hours each day and the same length of time be appropriated for private study. He would organise the programme of studies in such a manner that the morning hours might be reserved for the learning of the new matter and for subjects requiring a deal of brain work, while the afternoons might be assigned to practical subjects and to the application and reproduction of the knowledge learnt in the morning.

But, for Comenius, interest was, above all else, a resultant of the right method of teaching and tactful and sympathetic treatment with the pupils. He wrote, "If the scholars are to be interested, care must be taken to make the method palatable, so that every-

Interest as a
correlate of
right method
and sym-
pathetic treat-
ment.

thing, however serious, may be placed before them in a familiar and attractive manner." If he found the pupils indifferent or antipathetic to their lessons, he would lay the charge, without making any concessions for the mentality of the pupils or the conditions under which the teacher did his work, at the door of the teacher. His exaggerated notion of the part played by the teacher's method of instruction and sympathy for the pupils was embodied in such passionate statements as:—

"No blows should be given for lack of readiness to learn, for, if the pupils do not learn readily, this is the fault of no one but the teacher, who either does not know how to make his pupils receptive of knowledge or does not take the trouble to do so."

"A musician does not strike his lyre a blow with his fist or with a stick, nor

does he throw it against the wall, because it produces a discordant sound; but setting to work on scientific principles he tunes it and gets it into order. Just such a skilful and sympathetic treatment is necessary to instil a love of learning into the minds of our pupils, and any other procedure will convert their idleness into antipathy and their lack of industry into downright stupidity."

Comenius did not fail to point out how the teacher's method could
 Curiosity. lend interest even to irksome drill and grind. Above all else, he would call forth the pupil's interest by exciting in him the desire to know and to learn which he believed to be inherent in man. In other words, he would appeal to that inner impulse which prompts the child to explore the environment without any conscious purpose beyond the satisfaction of that impulse.

But, where practicable, Comenius would interest the pupil in the ^{Immediate utility.} lesson by bringing home to him the practical utility of the matter to be taught. To this end, he would, where possible, discuss the significance of the thing to be learnt in its bearings on actual situations in the pupils' lives as a preliminary to the lesson.

Comenius had a keen appreciation of the educational value of ^{Emulation.} emulation, which he considered to be "by far the best stimulus with school pupils." Accordingly, he recommended the association of the thing to be learnt with an element of sport, which might enlist the pupil's instinct of rivalry in the cause of education, for example, "by pitting the boys against one another to answer and explain riddling questions, comparisons, and fables."

Comenius knew well that the desire for social approval is a potent incentive to effort and was not slow in utilising this innate tendency in education. Hence his statement : "The civil authorities and the managers of schools can kindle the zeal of the scholars by being present at public performances such as declarations and promotions) and by praising the industrious ones and by giving them small presents (without respect of person.)"

It is worth mentioning that Comenius could discern that if the teacher desired to interest the pupil in the lesson, it was imperative for him to eliminate all rival interests, specially racial interests, for instance, loud noises which might tend to distract the pupil from the lesson. Consequently, he proposed that the school

Social ap-
proval.

Elimination
of rival in-
terests.

should be situated in a quiet spot, far from noise and distraction.

That Comenius would leave no stone unturned to make instruction pleasurable and interesting is illustrated to perfection by his remarks on the desirability of an agreeable school environment. He wrote, "The school itself should be a pleasant place, and attractive to the eye both within and without. Within, the room should be bright and clean, and its walls should be ornamented by pictures. These should be either portraits of celebrated men, geographical maps, historical plans, or other ornaments. Without, there should be an open place to walk and to play (for this is absolutely necessary for children), and there should also be a garden attached, into which scholars may be allowed to go from time to time and where they may feast their eyes on trees,

Interesting
school en-
vironment.

flowers, and plants. If this is done, boys will, in all probability, go to school with as much pleasure as to fairs, where they may hope to see and hear something new."

XII.

The Compulsory Stages of Education.

In his scheme for the organisation of a "ladder" system of schools, The four grades of schools. of Comenius was several centuries in advance of his times. He proposed four grades of educational institutions, each of which corresponded to a particular period of the educand's development.

Of these the lowest was the School Infant education. of the Mother's Lap, which Comenius proposed for every family. It was designed to educate infants of both sexes upto the age of six. Comenius's solicitude for a systematic training of children below the school-going age is a clear testimony to his modernism. The Greek and Roman thinkers, such as

Plato and Quintilian, held that education should begin at the very birth of the pupil and regarded right training in the nursery as the most important part of education. Plato dealt with the care of the child even before birth. But the Renaissance in its emphasis on classical languages and literatures threw the education of infants into neglect. Infancy came to be regarded, virtually, as the rag-end of humanity, too insignificant for the educator's consideration. If the educational speculators, who drew inspiration from the literary impulse, ever condescended to take account of infants, they did so, not because of the appreciation of the importance of infancy, but because they desired to cram the infant's memory with words that might, subsequently, 'come in useful' in connection with regular instruction in Latin and Greek.

Comenius's maternal school was, therefore, a bold deviation from, and a wholesome corrective to, the contemporaneous neglect of children. He observed that "Nature develops everything from beginnings which, though insignificant in appearance, possess great potential strength," and believed that "the roots of all sciences and arts in every instance arise as early as in the tender age, and that on these foundations it is neither impossible nor difficult for the whole super-structure to be laid, provided always that we act reasonably with a reasonable creature." Accordingly he recommended, for his school of infancy, a course of training that might embrace the rudiments of all the sciences and arts and lay solid foundations for knowledge, virtue, and piety. The curriculum was, consequently, pansophic.

The curriculum of the Mother School.

It was, however, suited to the age, capacity, interests, and needs of the infants. It is worth noting that what Comenius considered to be the beginnings of a science were not such in regard to the logical arrangement of the subject-matter of the science, but from the standpoint of the infantile mind. For instance, Comenius did not find the beginnings of geometry in the aim and scope of the science and its axioms and postulates, but in the infant's learning the sense of the words *great* and *small*, *long* and *short*, *wide* and *narrow*, and in its ability to draw and recognize *lines*, *curves*, and *circles*. In the same way, the generalisations and categories expressed by the words *something*, *nothing*, *thus*, *otherwise*, *where*, *similar*, and *different* were regarded as the rudiments of metaphysics. In the domain of physics, the infant was to be taught to

know water, earth, air, fire, rain, snow, etc. Instruction in history was to consist in the infant's recalling what recently happened and in noting the part that this one or that took in such or such an affair; while grammar as proposed for the infant was synonymous with the correct articulation of sounds and the right utterance of commonplace words and sentences in the mother tongue. In the same way, Comenius prescribed for this period a course of instruction in optics, astronomy, geography, chronology, arithmetic, statistics, manual training, and even in politics, ethics, and theology.

Stripped of the high-sounding names which Comenius's recommendations involved, the course of infantile training planned by him was tantamount to such sensory, motor, and verbal training as

The main features of the Mother School.

might suit the infant's age and at the same time provide him with an appropriate mass for formal education in the subsequent periods. It was, in fact, a crude precursor of the Kindergarten system of the 19th century and the Montessori school of our own age. It was characterised by several distinct features that were significant of the paidocentric groundwork of Comenius's educational system. Some of these we discuss below.

1. This infantile training was to be imparted to every child, not ^{Importance} in a public school, but at home. ^{of the mother.}

A professional teacher was therefore, out of question. In the same way, the nurse, who was a prominent factor in Plato's educational system for the guardians of the state and in Quintilian's scheme for the training of the orator, was ruled out of considera-

tion, for everybody could not afford to employ a nurse. The consequence was a recognition of the importance of the mother in education and an emphasis on female education. This feature of Comenius's school of infancy was an anticipation of what Pestalozzi advocated in the 19th century. It is interesting to note that in our own century the mother has again given place to the professional teacher, a tendency of the age which is partly a result of the highly psychologized and technical character of the earliest stage of modern education, but mainly a deplorable concomitant of the present-day artificial civilization, in which economic pressure has driven the fair sex to step into the shoes of men and substituted the hotel for the home. The Montessori school, in which the professional directress looms large, owes its origin, primarily, to the conditions arising out of this economic pressure.

2. Like Plato and Quintilian, Cornelius knew well the importance of imitation in education. He realised how early education in expression and behaviour implies the child's imitation of its elders. He also discerned that a child learns much more through the imitation of its fellows. We find him stating in his *Handbook of the Mother School*, "Children of the same age and same manners and habits are of greater service still. When they talk or play together, they sharpen each other more effectually, for the one does not surpass the other in depth of invention, and there is among them no assumption of the superiority of the one over the other, only love, candour, free questionings and answers." We come across a similar statement in the *Great Didactic*, "Better results and more pleasure are to be obtained when one pupil serves as an example and a

stimulus for another. For to do what we see others do, to go where others go, to follow those who are ahead of us, and to keep in front of those who are behind us is the course of action to which we are all most naturally inclined. Young children are always more easily led and ruled by example than by precept. If you give them a precept, it makes little impression; if you point out that others are doing something, they imitate it without being told to do so." In these remarks of Comenius is traceable that sociological tendency, which Rousseau ignored in early education, but which has come to be a distinctive feature of modern pedagogy, mainly through the influences of Pestalozzi and Froebel.

3. As an inevitable consequence of his sense-realism, Comenius recommended early education through the senses. "If some

Physical
nearness.

little occupation," he wrote, "can be conveniently provided for the child's eyes, ears, or other senses, these will contribute to its vigour of mind and body." As this juvenile instruction through sense-perception was proposed for all, rich and poor alike, there was no scope in it for the use of such costly articles, (for instance, toy-aeroplanes and wireless apparatus in miniature), as enable an infant in a Montessori school of to-day to acquaint itself, through sense-perception, with the contents of the remote environment. Witness the words of Comenius, "It is sufficient for this age to comprehend spontaneously, imperceptibly, and as it were in play, so much as is employed in the *domestic circle*." The principle of physical nearness was, therefore, as marked a feature of Comenius's initial stage of education as that of Pestalozzi.

4. In his suggestions for infant education, Comenius anticipated the importance of what modern psychologists call kinesthetic sensations. There is no doubt about his appreciation of the fact that the child learns, mainly, through movement. He devoted a full chapter of the *Handbook of the Mother School* to the discussion of "How children ought to be accustomed to an active life and perpetual employment." He made due provision for the child's instincts of construction and destruction. "In the impulse to construct and destroy," he averred, "there is but the effort of the little intelligence to succeed in making or building something for himself; so that instead of opposing the child in this he should be encouraged and guided." In the exercises which Comenius proposed to this end we get the first approaches to Froebelian "occupations."

That Comenius insisted on manual occupation, not on account of its utilitarian value, but owing to his appreciation of its effects on the emotional attitude of the child (and the consciousness of renewed vitality and heightened vigour which pleasure brings with it is evidenced by his remarks on infantile instruction in drawing. We read in the *Handbook of the Mother School*, "It matters not whether the objects be correctly drawn or otherwise, provide that they afford delight to the mind."

5. That spontaneous activity for activity's sake which we call play and which we believe to be nature's educational device was the essential feature of the maternal school. With more than Platonic clearness and in terms that sound like a distant echo of Froebelian statements on

Manual occupation for general development

Appreciation of play.

the subject, Comenius dwelt on the significance of play in early education. He remarked, "It is better to play than to be idle, for during play the mind is intent on some object which often sharpens the abilities. In this way children may be early exercised to an active life without any difficulty, since nature herself stirs them to be doing something." He reiterated, "Let their spirits be stirred up by means of agreeable play."

Next above the School of the Mother's Lap, Comenius proposed the Vernacula, so called because in it the mother tongue or vernacula, a term used by

The Primary School and the uniform treatment of all the pupils.

the Romans to signify the language of the common people, was the medium of instruction. Comenius recommended that there should be a vernacula in every village or hamlet in order that all the children between six and twelve

years of age might attend it. Social distinctions were extremely abhorrent to Comenius and he planned to give elementary education to the children of the labourers, the artisans, the peasantry, the bourgeoisie, the gentry, and the nobility under the same roof. Likewise, he thought that there was no justification for the segregation of girls. Plato had recommended the co-education of boys and girls only in infancy. In full recognition of the equality of man and woman and in consequence of his socialised standpoint Comenius would extend this co-education beyond the limits set by Plato. Nor would he make any concession for hereditary endowment, the innate aptitudes and talents, of the pupil. "When boys are only six years old," he thought, "it is too early to determine their vocation in life, or whether they are more suited

for learning or for manual labour. 'At this age neither the mind nor the inclinations are sufficiently developed, while, later on, it will be easy to form a sound opinion on both.' For Comenius individualistic peculiarities were no better than so many evil propensities which the educator should make it his business to eradicate. We read in the *Great Didactic*, "The differences of mentality are caused by nothing more than a superfluity or lack of some of the elements in the natural harmony, just as bodily diseases are nothing but abnormal states of wetness or dryness, of heat or cold." "These excesses or defects of disposition," Comenius believed, were eradicable "as long as they were not of old standing." It is amusing to note the analogy which he brought forward to lend force to his opinion on the matter. "In warfare," he wrote, "re-

oruits are mixed with old soldiers ; the weak and the strong, the sluggish and the active, fight under the same standard and obey the same orders as long as the battle continues. Thus it is in the camp of knowledge ; the slow are mixed with the swift, the weak with the quick-witted, the obstinate with the yielding, and are guided by the same precepts and examples as long as guidance is necessary."

Comenius's democratic sympathies that prompted him to provide
 Uniformity criticised. equal educational opportunities for the rich and the poor, the man and the woman, are undoubtedly commendable, but it may be questioned whether he was right in ignoring hereditary endowment till the child was 12 years old. In spite of the essential elements of our being, which we possess in common with our fellows, each of us is born wit

certain characteristics of the body and the mind which distinguish one member of the race from all others. Now these individual characteristics, however insignificant, are the most valuable assets of the individual. He can make the best of his life and contribute his greatest to the progress of the race by developing and rightly using his peculiar capacities. In the interests of society it is desirable to nurture and utilise individuality. At the same time it is absolutely necessary to develop what the individual possesses in common with his fellows, for the individual has to make use of his individuality in and through the social milieu, and for the social good. The problem, therefore, is how to develop both individual capacities and common powers and, what is more important, how to inter-connect the two. The solution of the problem

does not lie in first developing, as Comenius suggested, common elements and allowing the peculiar elements to lie dormant in the meanwhile, to be attended to after the common capacities have been adequately developed. This is not nature's way. The child is born, for example, with a facial expression, in which common elements are blended with peculiarities, and we observe the common and the peculiar developing in it steadily, concurrently, and harmoniously from the very birth. When nature does not postpone the nurture of even the physical peculiarities for the sake of general development, is it not a defiance of nature if we consider, as Comenius did, that the peculiarities of the mind have time to make holiday during the critical years of early life? As the things stand at present, we dare to defy nature in this respect almost daily.

in our practice, with the most deplorable results. The day is, however, not distant when rapid means of communication as well as a fairly accurate knowledge of the child mind will facilitate arrangements for duly attending to individuality. A super-normal child will not be suffered to have his progress shackled, and a sub-normal child will not be made miserable, by being saddled with normal children. Pupils who love uniformity and routine will not be accorded the same treatment as those who crave for continual variety. A child possessing strong visual imagery will not be required to learn how to read by the same method as a child in whom the motor type of imagery predominates. The problem is indeed difficult, for segregation will be as harmful as uniformity. Its solution, probably, lies along the lines suggested by the

Montessori system and the Dultonic plan, which are laudable, though tentative, attempts of our own times to combine individuality and universality.

As is evident from what we have seen above, the aim of the vernacula was general rather than specific. "We pursue,"

The general aim of the primary school.

said Comenius, "a general education, the teaching to all men of all the subjects of human concern. The purpose of the vernacula shall be that all children of both sexes may be instructed in that knowledge which is useful during the whole of life." The vernacula was, therefore, designed not only to pave the ground for higher studies in case the pupil aspired higher than the workshop, but as an institution imparting a self-sufficient and all-round training, practical, moral and religious, that might enable the pupil to judge and behave

rightly in all the situations of life. The vernacula was, for this reason, called a studio of humanity, and its business was to prepare a human being in the real sense of the term.

But Comenius's solicitude for the pupil's preparation for life in general did not make him forgetful of the pupil's preparation for the specific occupation of his adult age. Unlike those who are responsible for the organisation of the present-day elementary (specially, rural) education in India, Comenius would not convert the children of honest, hard-working men into literato-degenerates, unfit for manual labour. For this purpose he recommended that the school-day should be short enough to enable the pupil to utilise several hours of the day in domestic work, and prescribed that "the children should learn the mos-

Specific preparation not ignored.

'important principles of the mechanical arts, both that they may not be too ignorant of what goes on in the world around them, and that any special inclination towards things of this kind may assert itself with greater ease later on.'

The course of instruction in the vernacula was, of course, pan-
The panso-
phic course of
the primary
school.sophic. The children were
to learn to read and write in
accordance with the grammatical rules
of the mother-tongue, to acquire such
elementary knowledge of arithmetic and
geometry as could be learnt empirically
and might suffice for the actual needs
of the pupils, to exercise their voice in
singing well-known melodies and their
memory in committing to heart familiar
psalms and hymns together with the
catechism and the most important stories
and verses in the Bible, to learn and

practise the cardinal principles of morality and piety, and to receive instruction in the rudiments of economics, politics, universal history, and cosmography as well as in the broad fundamental principles of the mechanical arts.

The vernacula was to be divided into six classes, each with a course of a year. Comenius wrote a series of text-books, six in all, for the vernacula. The books were composed on the same principles as underlay the Janual series of text-books for the Latin school. Each of them was designed for a particular class and embraced all the subjects of its curriculum, thus providing the learner with an adequate apperception-mass for a more detailed study of the same subjects in the next higher class. Care was taken to suit all these books to the children for whom they were intended,

Text-books
for the pri-
mary school.

No pains were spared to make learning pleasurable. The very titles of the books were based on a clear understanding of what we call derived interest. These were the *Violet-bed*, the *Rose-bed*, the *Grass-plot*, the *Labyrinth*, the *Balsam-bed*, and the *Paradise of the Soul*. Being written in Czech, an obscure dialect, these text-books had not the vogue they deserved and soon disappeared.

XIII.

The Optional Stages of Education.

With the termination of the course in the vernacula, there ended the compulsory and universal period of education. If the pupil aspired higher than manual occupation, he could get admission to the Latin school, where he had to stay for six years, studying the same subjects as he learnt in the vernacula, with the only differences that the Latin school substituted Latin words for the vernacular names of the things which instruction in the vernacula acquainted him with, and that what he, previously, learnt in a broad and generalised outline was now presented to him in a more detailed and particularised form.

The Latin School course, more detailed repetition of the Vernacular School course.

Comenius proposed that there should
 be a Latin school in every city,
 and optional as attendance at
 this school was to be, Come-
 nius's consciousness of the equ-

Admission to
 the Latin
 School on
 democratic
 principles.

ality of men kept him from recommend-
 ing admission to it on the basis of social
 distinctions. On the contrary, he made
 intellectual fitness a passport to second-
 ary education. Witness his forceful
 words, "Nor should admission to the
 Latin school be reserved for the sons of
 rich men, nobles, and magistrates, as if
 these were the only boys who would
 ever be able to fill similar positions.
 The wind blows where it will and does
 not always begin to blow at a fixed
 time." Elective as admission to the
 Latin school was, its pansophic course of
 instruction was not based on the prin-
 ciple of election. Every pupil had to
 learn the same subjects. The aim of

the curriculum was that the youth who completed it should have received a training as a grammarian, well-versed in Latin as well as in the mother tongue, a dialectician, an orator, a mathematician, a musician, an historian, a moralist, practical as well as theoretical, and, last but not the least, a theologian. Of course, the Latin school did not pretend to give the pupil a perfect knowledge of the subjects involved in the training for which it was organised; its intention was merely to lay a solid foundation for subsequent advanced instruction by cultivating in the pupil enlightened and many-sided interests as well as by providing him with an adequate apperception-mass for, and teaching him the method of study of, the various branches of learning.

It is characteristic of Comenian *uti-*

**Linguistic
instruction in
the Latin
School.** litarianism that languages
were not regarded as subjects,
but merely as so many media

of communication and instruction. Consequently, whereas the content-studies were compulsory, instruction in some of the languages to be taught in the Latin school was elective. Of course, every pupil had to learn the vernacular as a medium of communication with his kith and kin and Latin as the medium of higher instruction and of communication with higher society ; but other languages were taught only to those who would find them useful in mastering the technique of the profession for which the teachers in the Latin school found them eminently fitted. Greek was, for instance, to be learnt by those who would turn out good physicians, while Hebrew was recommended for those who would do well as theologians.

Above the Latin school, Comenius
 The University. proposed a university in each
 y to cater for kingdom or big province with
 the needs of a further course of six years,
 the society.

The aim of the university was to prepare leaders for the different departments of social activity, the school, the church, and the state. It is significant of the socialised basis of Comenius's system that admissions to the university were recommended to be made in accordance with the needs of the church and of the state. He would, in other words, admit only such a number of students as would be required to fill in the various public offices, civil and theological, likely to be vacant when the students took their degrees. This recommendation merits the attention of the administrators of the Indian universities who admit students without taking into account the needs of the society, with the result

that the graduates go to swell the numbers of the unemployed and the discontented. Will it not be wise on our part to take a hint from Comenius and throw over-board the conventional notion of liberal education, to appreciate the cultural only as a means to the vocational, and to make the university cater for the actual needs of the society?

Limited as admission to the university was, great care was to be taken in the selection of suitable candidates. In the first place, they must be intellectually efficient. To this end

Intellectual
fitness a
necessary
qualification
for admission
to the univer-
sity.

Comenius recommended that "only select intellects, the flower of mankind," should be admitted, while "the rest should turn their attention to more suitable occupations, such as agriculture, mechanics, or trade." He proposed that "a public examination should be held for the stu-

dents who leave the Latin school, and from its results the masters should decide which of them should be sent to the university, and which should enter on the other occupations of life."

Given intellectually efficient candidates for admission to the university, Comenius would make a further selection with his eyes on moral qualifications. "Care should be taken," he exhorted, "to admit to the university only those who are diligent and of good moral character. False students, who waste their patrimony and their time in ease and luxury, and thus set a bad example to others, should not be tolerated." This statement contains an excellent counsel to those who are at the helm of affairs in our universities. It is a deplorable fact that the Indian universities, as they are at present, persistently disregard the

Morality and
university
admission.

principle onunciated by Comenius and render the university training too soft, except on paper, under the impression that the leisure which the student would thereby enjoy would enable him to make the best of the informal educative influences, which must be in the air in a well-regulated university, with the result that in our seats of learning,—specially in those that are of recent growth and have attempted to model themselves on the sanctified universities at Oxford and Cambridge, but have succeeded in imitating only their superficial characteristics,—pseudo-students and pseudo-graduates, who are an unnecessary drain on the purses of their parents and, sometimes, of mis-informed philanthropists, are not exceptions, but types.

It is puzzling to note that whereas
Specialisation
 a feature of
 the university
 course. innate individual differences
 were so many deformities for

Comenius in the earlier periods of the educand's development, he set store by the individual capacities and inclinations that manifested themselves towards the end of the Latin school course. Perhaps, he was under the impression that the individual characteristics were of two kinds, the desirable and the undesirable. The latter expressed themselves early in childhood; these were not to be catered for, but eliminated. On the contrary, the former did not express themselves until those capacities of the individual which he shared with all his fellows were fairly developed. The assumption, of course, has no justification, but it was responsible for Comenius's proposals for a compulsory, uniform course of instruction in the schools and a completely elective curriculum in the university. "The studies will progress with ease and success",

Comenius averred, "if each student devote his undivided energies to that subject for which he is evidently suited by nature. For some men are more suited than others to be theologians, doctors, or lawyers, just as others have a natural aptitude for, and excel in, music, poetry, or oratory. This is a matter in which we are apt to make frequent mistakes, trying to carve a statue out of every piece of wood, and disregarding the intention of nature. The result is that many enter on branches of study for which they have no aptitude, produce no good results in them, and attain to greater success in their subsidiary pursuits than in those that they have chosen."

Notwithstanding this sane recognition of individuality as the dominant factor in the choice of higher studies, the bogey of pansophia did not forsake

Encyclopa-
dic learning
attempted in
exceptional
cases.

Comenius even in his delineation of the university. Of course, there is nothing objectionable in his suggestion that the university should make provision for the study of every branch of human knowledge, for this should be, unquestionably, a characteristic of a centre of higher learning ; but it is not difficult to point out the absurdity of his recommendation that "those of quite exceptional talent should be urged to pursue all the branches of study, that there may always be some men whose knowledge is encyclopædic."

The same paasophic standpoint was responsible for Comenius's re-
Epitomes. commendation that every class of author should be read in the university. To facilitate this he proposed that every author should be epitomised, the epitome serving a twofold purpose; it could take the place of the works of the

author in case the student had no time or inclination to read the originals, and it was also capable of being utilised as an introduction to the author and his works.

In spite of his enlightened views on education in general, Comenius was prone to make a fetish of examination as a test of meritorious work. It is, however, to his credit that with him examination was more a test of the power generated by learning than of reproductive memory. Witness his thoughts on the examination for the award of degrees: "It is most important that everything be conducted with perfect fairness, and, therefore, instead of allowing the academic degree to be won by a disputation, the following plan should be adopted. The candidate (or several at once) should be placed in

the midst. Then men of the greatest knowledge and experience should question them and do all they can to find out what progress he has made, both in theory and in *practice*. For example, they may examine him on the text of the Scriptures, of Hippocrates, of the Corpus Juris, etc; asking him where such and such a passage occurs, and how it agrees with some other passage? if he knows of any writer who holds a different opinion, and who that writer is? What arguments he brings to bear, and how the contradictory views may be reconciled? with other similar questions. A *practical* examination should then follow. Various cases of conscience, of disease, and of law should be submitted to the candidate, and he should be asked what course of action he would pursue, and why?"

The desire of Comenius to prepare

practical men rather than pedants evinced itself in his pronouncing, like Montaigne before him and Locke and Rousseau after him, that travel was necessary to give a finishing touch to the education of the leaders of men whom the university intended to produce. He, however, forbade the young to travel, "until the hot-headedness of youth has passed away, and they are sufficiently versed in the ways of the world to do so with advantage."

Over and above the four types of educational institutions which we have discussed, Comenius conceived the foundation of a Universal College of Research. Schola Scholarum (School of Schools) or Collegium Didacticum (Didactic College) somewhere in the world. This institution was delineated to be a Solomon's House, its function being to systematise

and extend knowledge, whereas other institutions aimed at the communication of knowledge. It was, therefore, to "bear the same relation to other schools that the stomach bears to the other members of the body; since it would be a kind of workshop, supplying blood, life, and strength to all."

XIV.

Achievements and Influence

The brief sketch of Comenius's educational work that has been given in the foregoing pages is, I believe, sufficient to give my readers a clear idea of the merits and defects of the system he advocated. Let us take a charitable view of the defects that characterised his doctrines, because they were the inevitable effects of the age in which he lived, and also because his merits outnumbered his defects. He was undoubtedly the first writer who dwelt on all the problems connected with education. He was evidently inspired by a desire to elevate education to the position of an applied science based on what was relevant to it in the existing spiritual, moral, mental, and natural sciences. His

Comenius's
agreement on
most points
with modern
pedagogy

practical standpoint and enlightened utilitarianism invested his doctrines with that meritorious worth which the speculations of most educational theorists lacked. He was quite without precedent in undertaking to organise a many-sided training for all human beings because of their very humanity, to outline a definite, self-sufficient and practicable system of elementary education, to elaborate a suitable scheme of education for the infants, to emphasise the education of girls as an absolute necessity, and to design such public schools as set at naught the differences of rank, wealth, and sex. In his scheme of education he made provision for the pupil's preparation for the world to come, at the same time equipping him for adjustment to the varying situations of life in this world. He broadened the curriculum by assigning in it suitable places to the hitherto neglected

social and physical sciences and to training in manual dexterity and virtuous conduct as well as to linguistic, metaphysical and religious instruction. He pointed out that education should be a process in conformity with nature. He subordinated linguistic instruction to content-studies, Latin to the vernacular, and grammar to the reading-book. He laid stress on object lessons, visualising devices, and learning by doing. He correlated the different educational activities and the different subjects of the course. His wise appreciation of the principle of order prompted him to recommend a procedure from the more elementary to the more advanced, slow, steady, continuous, and progressively, but imperceptibly, difficult steps, in conformity with the growing powers of the pupil, and to delineate grade curricula, graded schools, and grade

classes with graded text-books. His careful regard for the happiness of the child evinced itself in his endeavour to lighten the drudgery of learning by all possible means and to introduce into the schools a more humane treatment of the pupil.

Comenius's name, consequently, stands high on the roll of the great educators. It also occupies a respectable place in the list of those who have worked for the salvation of mankind. His ingrained philanthropy expressed itself in his careful regard for the interests of the children, the women, the poor, and the depressed. This chivalrous championship of the weak, which was an outcome of his religious training, reflects the influences which Islam exercised over Europe through the universities of Cordova and Granada and also through

Comenius's
passionate re-
gard for the
weak, an in-
fluence of
Islam.

the Crusades. Islam is the Magna Charta of the weak. The ethical system which it includes protects the rights of women and children and enjoins active sympathy with the poor, the orphaned, the care-worn and the aged. It commands men to have due regard for the comfort of the stranger and the prisoner and to adopt a chivalrous attitude towards the fallen enemy. It makes adequate concessions for the sick, the invalid, and the destitute in matters of worship and social and religious obligations. It does not abolish the rights of private property, but saves the poor classes from the baneful effects of capitalism by insisting on adequate wages for labour, by condemning usury, by treating charitable deeds as means of salvation, and by transferring superfluous money from the coffers of rich men to the public exchequer in the

shape of *zakaat* and other religious dues
 for the benefit of the needy. It did not
 abolish slavery, but bound the masters
 to treat their slaves as their own chil-
 dren, and the history of Islam records
 many instances in which the slaves be-
 came the sons-in-law of the kings and
 even inherited their masters' thrones.
 It makes obligatory for a Muslim ruler
 to be ever in pursuit of the welfare of
 his non-Muslim, as well as Muslim,
 subjects. It places on the same pedestal
 the prophet Mohammad (peace be on
 him) and his humblest follower, the
 Caliph and the homeless wanderer, the
 field marshal and the private soldier, the
 millionaire and the beggar as regards
 civic rights and personal privileges.
 It does not ignore the well-being of
 even lower animals, prohibiting the
 exaction of over-work from domestic
 beasts, prescribing careful arrangements

for their feeding and housing, and allowing hunting, not as a means of recreation, but for the sake of exterminating dangerous animals or for the purpose of procuring food when other means of sustenance are not available.

It may be said that Comenius as well as other reformed Christians who revolted against the Pope had not the slightest intention of adopting the principles of a comparatively new religion as Islam, but to revive original Christianity. I admit this and add that Christianity as it was preached by Christ (peace be on him) was nothing but Islam. The common usage which attributes the origin of Islam to the advent of Mohammad (peace be on him) has nothing but its ignorance to recommend it. Islam dates from the times of Adam and Eve (peace be on them), and the *Kuran* tells us

Islam not a
new religion.

quite clearly that Adam, Noah, Abraham, Isaac, Jacob, Joseph, Moses, David, Solomon, and Christ (peace be on all of them) were the representatives of Islam as well as Mohammad (peace be on him.)

That Comenius was unconsciously, but profoundly, influenced by the spirit of Islam, which was then in the air in Christendom, is evidenced by his clear sense of the unity that pervades the entire universe, spiritual and material, an obvious corollary from the Islamic conception of One God.

From the conception of the unity of the universe there emanated the most notable ideals of Comenius. His pansophic scheme, as well as his educational system, was to unite science and religion. He hoped for the union, not only of all the Christian churches, but of man-

Unification a
feature of
Comenian
ideals.

kind in general by conversion, one after another, of the Muslims, the pagans, and the Jews through universal knowledge, universal schools, universal books, universal methods of instruction, the universal college of research, and a universal language.

In fact, Comenius was one of those who lived, worked, and suffered for mankind. To him belongs the glory of a martyr. But his glory was for himself alone. His contemporaries failed to assimilate and apply his doctrines, and the generations that came after him had no knowledge of his educational theory till the German investigators re-discovered his didactic works about the middle of the 19th century, too late to save educational reformers from the trial and error which afflicted them during the interim. As it is, we find that our modern peda-

Little influence
exercised
by Comenius
on education.

gogy agrees in its essence with the Comenian system of education, but it has been developed by workers like Pestalozzi, Froebel, and Herbart, who discovered and formulated the principles of education independently of Comenius.

Of the numerous works of Comenius his Latin text-books alone found favour with men actually engaged in education.

Obscurity of
Comenius's
works on edu-
cational
theory.

The *Janua* remained for several generations a popular text-book for beginners; the *Orbis Pictus* was thumb-ed by school boys in all the countries of Europe. But these books were used, not for a knowledge of the real world, as designed by Comenius, but for an introduction to Latin as an end in itself, but the *Great Didactic* and the books that amplified its different chapters, for instance, the *Handbook of the Mother School*, fell into oblivion.

The causes for this utter neglect of

Causes of the
above:—
(a) Comenius's many-
sided interests
and mysticism.

Comenius's precious works are not far to seek. In the first place, his many-sided interests were responsible for it. Had Comenius confined himself to education, he would have rendered mankind more effective service than he actually did. As it was, his dearest interests lay in religion. As a minister of an enthusiastic denomination he had to engage himself in polemical writings, which generally roused the indignation of the hostile sects. Religious toleration was not a feature of those times, and in their aversion to Comenius's religious views most men studiously abstained from considering his educational doctrines on the ground, that they emanated from an unholy source. To make matters worse, Comenius was involved in the prophecies of Drabik and others, who

held out to the persecuted Moravian Brethren the hopes of a triumphant return to their fatherland. It is, perhaps, too much to accuse Comenius of want of judgment and superstitious leanings. His misfortunes appear to have been responsible for the ease with which he became a dupe of the artful imposters. When no effective support is available, even a straw is clutched with avidity.

When facts fail to afford a solace for wounded hearts, even an illusion is invested with incredible significance. It was quite natural that Comenius, who had hope after hope frustrated, would rely even on the groundless or the uncertain, if it promised relief from his persuasion. Needless to say, the prophecies were not borne out by what actually happened. The unscrupulous Drabik himself made a formal confession that he was befooling the Protestant world, and returned to the

fold of the Pope. The effect of this filthy business on Comenius's reputation was deplorable, for he had thrown himself with enthusiasm into the circulation and defence of the prophecies. Men came to regard him as an embodiment of superstition, and Adelung in his *History of Human Folly*, published in 1785, gave him a prominent place in the list of magicians, alchemists, and soothsayers.

Comenius's pansophic interest ultimately proved to be as injurious to his reputation as his misguided sense of the supernatural. Commendable as the idea of accumulating and co-ordinating the various branches of human knowledge was, the defective education which Comenius had received made him unfit for the enterprise. Had he contented himself by ringing the bell that would call all the wits together, he would have received nothing but praise. But his

zeal made him blind to his own defects as a scholar and he actually wrote treatises on physics, astronomy, and other subjects as contributions to panosophia. The fact is that his knowledge of natural philosophy was at once antiquated and erroneous. These works subjected him to the scorn of the following generations, and in their disdain for his philosophical and scientific compositions the critics contemptuously discarded his educational writings also.

In the second place, Comenius's want of skill as a writer accounts for the ephemeral popularity of his books. He lacked a sense of proportion and allowed his pen to run away with him. Conciseness and terseness were unknown to this voluminous writer. Needless repetitions tried the patience of his readers. Unnecessary divisions.

(b) Verbosity
and defective
style of
writing

and sub-divisions marred the continuity of his statements and had a repelling effect on those who undertook to peruse them. Comenius's lack of the æsthetic sense deprived the *Great Didactic* of the attractive style which made Rousseau's *Emile* so popular. The *Great Didactic* was published as a part of the folio edition of the complete educational works of Comenius, where it was swamped by works of minor importance.

In the third place, Comenius's belief in the continuity and organic development of educational theory prevented him from success in educational reform. He tried to build his new system of education on existing lines; for example, though he considered Latin to be a defective language, he made a compromise with the humanistic school and strove to make Latin a more efficient instrument

Humanism
not uprooted.

secondary and university education. Humanism was, no doubt, too thoroughly entrenched to be easily ousted, but the Comenian system of education, which was in its basic principles of sense-realism and universal instruction contradictory to the humanists' insistence on literary training and the education of the chosen few, could gather no strength from the unnatural alliance. It was desirable that Comenius should first destroy and then reconstruct. The great fire was a necessary preliminary to the construction of London on hygienic lines. A Rousseau was needed to weed the noxious Ciceronianism before modern pedagogy could strike deep roots.

THE END